THE UNIVERSITY
OF ILLINOIS
LIBRARY
614.7
B56s
ILLINOIS HISTORICAL SURVEY

A SANITARY SURVEY of CHAMPAIGN-URBANA, ILLINOIS.

A COMPOSITE REPORT

H. H. Black

W. R. Hildeman G. C. Unger

May, 1931

614.7
B56s

ILLINOIS HISTORICAL SURVEY

TABLE OF CONTENTS

Chapter	I	Introduction	
		H. H. Black	Page 1
		G. Organization Board of Health	
		W. R. Hildeman	22
"	II	Sewage	
		G. C. Unger	30
"	III	Garbage, Refuse, Ashes	
		W. R. Hildeman	51
		Criticism of Methods	
		H. H. Black	60
"	IV	Vital Statistics	
		W. R. Hildeman	63
"	V	Sanitary Nuisances	
		G. C. Unger	79
"	VI	Infectious Diseases	
		H. H. Black	90
"	VII	General Summary	
		H. H. Black	118
		G. C. Unger	

Gift of Prof. H. E. Babbitt to the Engineering library 4 June 1931
770330

CHAPTER I

Introduction

A. Location

The cities of Champaign and Urbana are located in Champaign County, in the East Central part of Illinois, 125 miles south of Chicago and 35 miles west of the Indiana-Illinois state line. The latitude is 40° 10' North and the longitude 88° 15' West. They are 90 miles northeast of Springfield, the State Capitol of Illinois and 120 miles west of Indianapolis, the Capitol of Indiana. They have an area of 8.5 square miles. A map of Illinois, and a detailed map of Champaign-Urbana will be found on pages 2 and 3.

B. History

The history of Champaign-Urbana is intimately connected with the history of the early Indian settlements and the development of the great prairie region. Written accounts of Illinois extend back only to 1634, at which time a Frenchman called Jean Nicolet reached the regions of Central Illinois from the Great Lakes territory on the north. At that time the Illinois Indians composed of the five tribes, Kaskaskias, Cahokias, Tamawas, Peorias and Mitchigamies, held posession of all the territory in which the state is now located, except for a small area around Lake Michigan held by the Miamis, Pottawatomies,

ILLINOIS

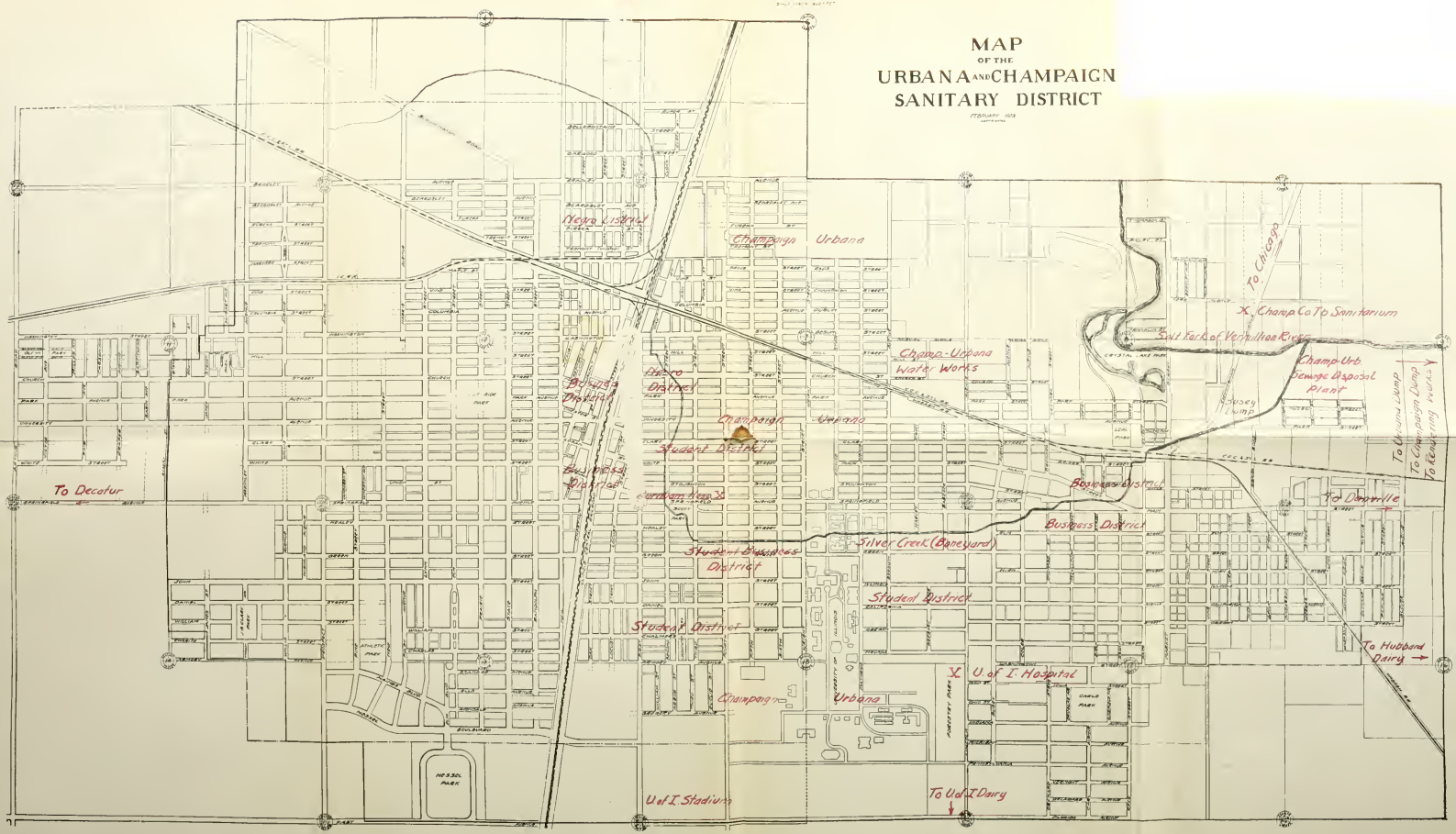
Starved Rock
LAKE
MC HENRY
LAKE MICHIGAN
OGLE
DE KALB
KANE
COOK
DU PAGE
WILL
LEE
WHITESIDE
ROCK ISLAND
HENRY
BUREAU
LA SALLE
MERCER
KANKAKEE
PEORIA
LIVINGSTON
WOODFORD
IROQUOIS
FULTON
TAZEWELL
MC LEAN
FORD
MASON
LOGAN
DE WITT
CHAMPAIGN
MENARD
SPRINGFIELD
MACON
PIATT
QUINCY
MORGAN
SANGAMON
DECATUR
DOUGLAS
EDGAR
CHRISTIAN
MOULTRIE
COLES
SHELBY
CLARK
GREENE
MONTGOMERY
CUMBERLAND
JERSEY
CALHOUN
MADISON
BOND
FAYETTE
JASPER
CLAY
RICHLAND
GRANITE CITY
EAST ST. LOUIS
BELLEVILLE
CLINTON
MARION
CLAY
ST CLAIR
WASHINGTON
WAYNE
MONROE
PERRY
FRANKLIN
WHITE
RANDOLPH
JEFFERSON
HAMILTON
HAMILTON
GALLATIN
WABASH
UNION
JOHNSON
POPE
HARDIN
MASSAC
PULASKI
ALEXANDER
OHIO
WABASH
MISSISSIPPI
ILLINOIS
SCALE
MILES

Figure 1. Map of Illinois

and Winnebagoes. A century of discovery and exploration under the Frenchmen La Salle, Hennepin and Henry de Tonti who pushed south from Chicago (Fort Dearborn) along the Illinois River followed the coming of Nicolet.

The natives, during this period, were engaged in warfare with the powerful Iroquois on the East. This ended in the extermination of the Illini at Starved Rock on the Illinois River about 1730. After the destruction of the Illini, the northern tribes, allies of the Iroquois, took posession of the territory of the vanquished Indians and it was not until a year after the incorporation of the state (1818) that a treaty at Edwardsville, Illinois forced the Indians farther westward across the Mississippi River.

MAP
OF THE
URBANA AND CHAMPAIGN
SANITARY DISTRICT

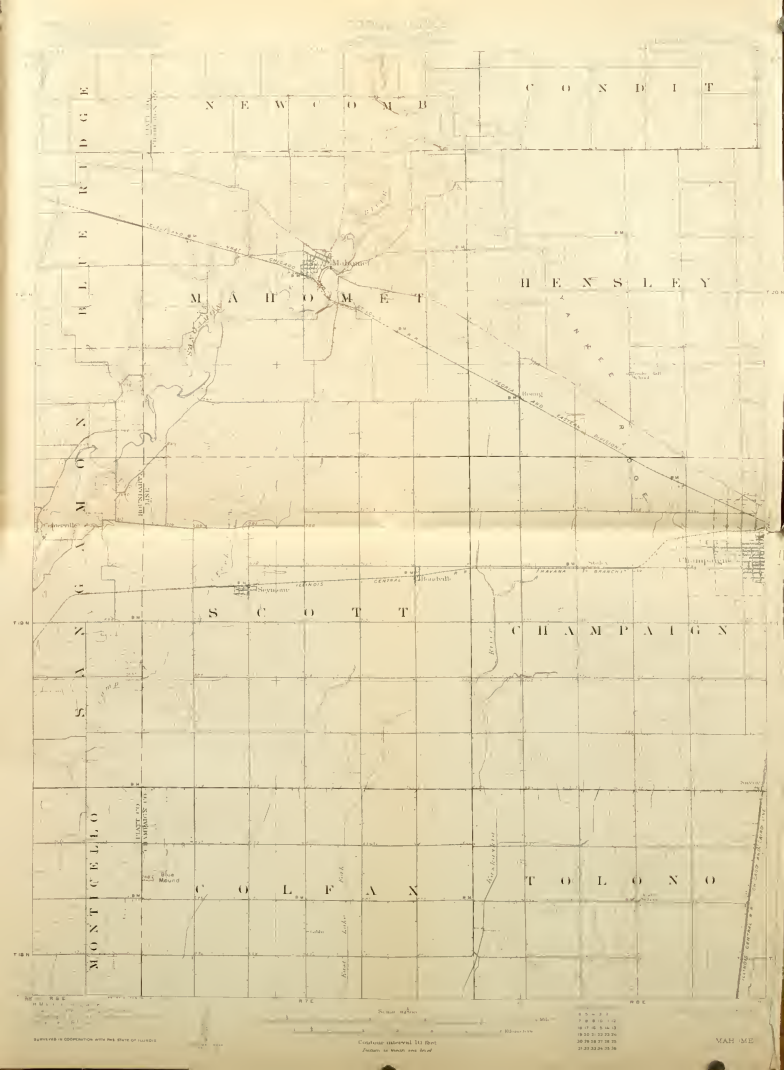


This Map For Sale by The U. of I. SUPPLY STORE
Green and Wright Streets, Champaign
Books, Stationery and Supplies, Athletic Goods, Gift Shop, Art and Design Supplies

Figure 2. Map of Champaign-Urbana.

RANTOUL
COMPROMISE
SOMER
STANTON
CHAMPAIGN
URBANA
ST JOSEPH
PHILO
SIDNEY
Champaign
Urbana
St Joseph
Philo
Sidney
Scale 1:62500

URBANA


NEWCOMB
CONDIT
BELLFLOWER
MAHOMET
HENSLEY
SANGAMON
Mahomet
Champaign
SCOTT
CHAMPAIGN
MONTICELLO
COLFAX
TOLONO
Blue Mound
Bloomington
Urbana
Illinois Central
Wabash
Big Four
Surveyed in cooperation with the State of Illinois
Contour interval 10 feet
Datum is mean sea level
MAHOMET

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

THE TOPOGRAPHIC MAPS

The United States Geological Survey is making a topographic atlas of the United States. The work has been in progress since 1882, and more than ½ per cent of the area of the country, including all the mountainous districts, has been mapped. The areas mapped are widely distributed, every State being represented, as shown on the key-map which accompanying each annual report of the Director.

The atlas is being published in sheets or convenient size, about 16½ by 20 inches. The limits of area of land represented on an atlas sheet is bounded by parallels and meridians and so called a quadrangle. The quadrangles mapped cover 1° of latitude by 1° of longitude, 30′ of latitude by 30′ of longitude, 15′ of latitude by 15′ of longitude, or smaller areas, the size of the area mapped depending on the scale used. Several scales are employed. The smallest scale, that used for quadrangles covering 1° to 2 250,000 or very nearly 4 miles to 1 inch—that is, 4 linear miles on the ground is represented on 1 inch each on the map. This scale is used for maps of the desert regions and other parts of the far West. For the greater part of the country, which is mapped by quadrangles covering 30′ a larger scale, 1-125,000, or about 2 miles to an inch is employed. A still larger scale, 1-62,500 or about a mile to an inch, is used for quadrangles covering 15′, and where the topography is rolling or mountainous. A fourth scale, 1-31,680, or one-half mile to an inch, is employed for maps that are to be used in connection with questions of drainage and a few maps of mining districts are published on still larger scales.

A topographic survey of Alaska has been in progress since 1898 and nearly 40 per cent of its entire area has now been mapped. Hawaii is the area mapped at 10 per cent of the Territory has been covered only by reconnaissance work, the results of which have been mapped on a scale of about 10 miles to an inch. The maps of nearly all the remaining two-thirds of the territory have been published on a scale of 1-250,000, or about 4 miles to an inch. These maps are intended especially for the use of the army. A few areas that are of peculiar importance, aggregating about 2,000 square miles, have been surveyed in greater detail and mapped on the scale of 1-62,500, or about a mile to an inch.

All water features are print and certain in full blue lines and the sea in blue water-lines; some lakes are dry at least s shown by lines of dots and dash

Relief is shown by contour the ground passes through point One who follows a contour will not go up or down. The contour li the slopes of the hills or mo elevations. The size of the s the datum or zero of elevation contour at, say, 20 feet above se if the sea were to rise 20 feet the lan Hence this contour is 20 feet slope it is near the coast. W are far apart on the map they flat; they are close together they ind they rise together in one line the

The manner in which contours and grade is shown in the figure

Figure 3. Topographical Map

The township of Urbana was laid out by a party of United States surveyors in 1822. The same year the first white settler in Champaign County, Runnel Fielder, squatted 4 miles northeast of the present city of Urbana on Salt Creek, a branch of the Vermillion River. About the same time, one William Tompkins squatted on ground now within the city limits of Urbana. His land was near a spring at a place where the Kickapoos and Pottawattamies had strewn the remains of many feasts, hence to this day, the little creek on which he camped is known as the "Boneyard".

The country gradually became settled so that in 1833 the General Assembly of the State of Illinois established the County of Champaign and named Urbana the County Seat. The first building in West Urbana (present Champaign) was erected in 1854 by the builders of the Illinois Central Railroad which was just being constructed at that time. The location of the railroad was two miles west of Urbana. The small group of houses in West Urbana first erected for the convenience of the workers on the railroad continued to grow. Six years later it was firmly established as an incorporated village separate in government from Urbana. The name of this new settlement was Champaign.

There was a serious epidemic of cholera in 1834. Although no data are obtainable regarding the epidemic it was quite a serious menace to the health of the community and all but wiped it out at that time. Cholera and also malaria remained endemic for years until the swamp lands of Champaign County were drained.

In 1854, when the Illinois Central Railroad was building its tracks through Champaign County cholera again broke out. During the second epidemic there were more doctors available and so the toll of life was not so great as before.

With the coming of the railroad, the land became settled and large farms were cleared and worked. Farming became the leading industry of this region. Business houses were established to supply the farmers and the towns enlarged. Churches and schools sprang up and the year 1867 saw the beginning of what was to become a great university.

In 1894 Professor A. N. Talbot of the University of Illinois was put in charge of the design and construction of a sewerage system to be accompanied by adequate disposal. In November of this year the Urbana Sewer System was first put into operation. The only means of treatment at this time was a small settling tank. Champaign, in November 1897, installed a small septic tank which is described more fully in the chapter on Sewage. These systems were improved upon from time to time until the present modern disposal plant was built in 1924 at a cost of a half million dollars.

Today the combined population of the two cities is 33,390. Due to the University there is a transient population of approximately 11,000 more.

Table I is a chronological history of some of the main events in the history of Champaign-Urbana.

Table I

History of Champaign-Urbana

1634. First white explorer to reach the region of Central Illinois.

1730. Destruction of the Illini Indians and the beginning of peace throughout the territory.

1818. Illinois admitted to the Union.

1819. Last of the Indians move westward across the Mississippi River.

1822. Township of Urbana surveyed. First white settler in Urbana.

1833. County of Champaign established.

1834. First cholera epidemic.

1854. First railroad constructed into Champaign County. Second cholera epidemic.

1860. Champaign organized as a city separate from Urbana.

1867. Charter granted to Illinois Industrial University (later University of Illinois.)

1894. First sewage disposal plant.

1924. Modern sewage disposal plant erected for twin cities at a cost of $500,000.

1931. Date of survey. Population 33,390.

C. Topography

The country is rolling and practically without woods except along a few of the river bottoms. Originally the country was about one-fourth timber. In 1853 there were 85,000 acres of swamp land in Champaign County which were instrumental in keeping malaria endemic. These have since been drained at a

cost of about a million dollars. The western half of the county drains through the Kaskaskia and Sangamon Rivers into the Illinois River, the eastern half drains into the Vermillion and thence into the Wabash River.

The country slopes gently to the South and East, crossed by moraines which were deposited at the time the glaciers occupied the territory. One system of ridges crosses the northeast corner of the county and another runs parallel to it through the central part; the two are connected by lateral ridges. The elevation of Champaign is 741 feet above sea level, that of Urbana is 718 feet. (Topographical map page 3a.)

D. Geology

The top soil of Champaign County is rich and black, from one inch to one foot deep, underlain by a yellow clay subsoil to a depth of approximately 50 feet. Below this are beds of clay, gravel, quicksand and hardpan of drift formation to a depth of 400 feet, below which are other alternations of shale, slate, soapstone and limestone, with one or more small beds of coal in scattered areas.

The surface of the country is a result of the ice beds which once covered the entire territory of Central Illinois. The deepest wells in this area penetrate the Kimmswick-Plattin or so-called Trenton, Limestone. Tables II and III give the formations encountered in the drilling of a Champaign well. These rocks belong to the Ordonician period, and were laid down as sediments in a sea that covered this region something like 500 million years ago. The Ordonician period makes up

Table II

Log of Well in Champaign

East of Power Plant, NE 1/4, Sec. 12, T. 19N. R. 8E, Champaign

Company: J. W. Stiles, and E. M. Burr

Remarks: Driller log

	Description of Strata	Thickness Feet	Depth From Feet	Depth To Feet
1.	Black soil	4	0	4
2.	Yellow and blue clay	44	4	48
3.	Quicksand	12	48	60
4.	Gravel	7	60	67
5.	Blue Clay	35	67	102
6.	Quicksand	71	102	173
7.	Gravel	6	173	179
8.	Hardpan	5	179	184
9.	Sand	11	184	195
10.	Gravel	7	195	202
11.	Hardpan	51	202	253
12.	Black shale (show of coal)	1	253	254
13.	Sand	21	254	275
14.	Gray shale	8	275	283
15.	Black shale	1	283	284
16.	Sand	16	284	300
17.	Shale	33	300	333
18.	Black shale (show of coal)	10	333	343

Table II (Continued)

		Feet	From Feet	To Feet
19.	Fire clay	67	343	420
20.	Limestone	3	420	423
21.	Brown shale	8	423	431
22.	Limestone	5	431	436
23.	Shale	9	436	445
24.	Limestone	55	445	500
25.	Brown shale	23	500	523
26.	Limestone	7	523	530
27.	Shale	14	530	544
28.	Limestone	14	544	558
29.	Bed Rock (SS?)	5	558	563
30.	Limestone	21	563	584
31.	Shale	46	584	630
32.	Brown shale	33	630	663
33.	Limestone (vein of water which nearly filled boring)	123	663	786
34.		142	786	928
35.	Sandstone	117	928	1045
36.	Sandstone	75	1045	1120
37.	Limestone	33	1120	1153
38.	Limestone	347	1153	1500
39.	Dark shale	14	1500	1514
40.	Limestone	44	1514	1558
41.	Shale	26	1558	1584
42.	Limestone	93	1584	1677
43.	Limestone	161	1677	1838

Table III

Drillers Log Record

Tentative Summary

	Thickness	Depth	
	Feet	From Feet	To Feet
Quaternary 255			
Surficial Material	253	0	253
Pennsylvanian 167			
McLeansboro	167	253	420
Lower Mississippian 243			
Kinderhook and Sweetland Creek	243	420	663
Devonian and Silurian 717			
Onondage)			
Niagaran)			
Brassfield)	717	663	1380?
Alexandrian)			
Ordovician 458			
Maquoketa	204?	1380?	1584?
Kimmswick-Plattin (Trenton Limestone)	254	1584	1838T.D

Log does not permit good differentiation

the latter half of Early Paleozoic time. During this period shelled animals flourished in great profusion in the shallow sea of this region. Among these, Bryozoa and Brachiopods were abundant; the flower-like crinoids and delicate corals were in places common; and cystoids and trilobites were never so numerous before or since. Giant Cephalphods with straight, chambered shells several feet in length were easily the masters of those ancient seas. Here for the first time appeared the earliest fishes in small forms. The shells of unnumbered generations of animals accumulated on the sea bottom and make up the Plattin and Kimmswick limestone of this region.

At the end of this long submergence the sea again drained from part of the Continent, and there followed another long interval of land conditions. These land conditions preserve less fully the history of a region than do the times of submergence.

After a long emergence the sea again slowly advanced upon the lands, at first from the south, and later, also from the north. The greater part, or all, of Illinois was submerged, and with it the Champaign-Urbana Region. During most of this time the sea was muddy, and the sediments that make up the Maquoketa shale were laid down in this region to a depth of 180 to 200 feet. This sea withdrew from Illinois somewhat earlier than from farther east in North America. The emergence brought the Ordonician period to a close.

The Silurian and Devonian formations were laid down in Middle Paleozoic time. Land life was still rare and simple

in this far-off time. No air-breathing animals are certainly known, and only the lowest types of plants were becoming weaned away from their ancestral aquatic habitats.

The streams that drained the land of this region in early Silurian time deposited sand along their channels, and these narrow belts of channel sand, called the Hoing Sand, are the reservoirs from which the oil and gas is produced in the west part of Illinois.

The successive formations of this period were made by oscilating seas with relatively long periods when land conditions prevailed. Near the end of the Niagaran eqpoch, land conditions prevailed for a few hundred thousand years. On the lands some animals began to develop the air-breathing habit, and forms like scorpions and centipedes appeared for the first time.

Late Paleozoic time includes the Mississippian and Pennsylvanian periods. Deposition of the Mississippian sediments in this region was initiated by the advance of a sea in which the muds of the kinderhook shale were deposited on the earlier, darker shale of the late Devonian.

During the Pennsylvanian period the valleys and ravines which had been formed were promptly filled with sediment and the surface was deeply covered with a mantle of mud and sand. The first deposits were coarse and made up the Bernadotte sandstone, which was followed above by more shaly sediments of the Avon formation. At times the water was shallow and was bordered by low-lying swampy lands. In these low areas there grew a rich

and luxuriant vegetation. Trees were abundant and some areas were literally jungles. As generations of these plants followed one another in long succession, their leaves and trunks and branches fell into the shallow water, and were buried out of the reach of the decomposing agencies of the air. In such a way thick deposits of plant debris were accumulated. These buried accumulations of plant material were slowly transformed into coal beds.

Upon the deep foundation of sedimentary rocks above described, there is spread the loose mantle of soil and surface material on which our present civilization is built. Each successive layer of this foundation was at one time the surface of the sea bed, and makes up a separate page in the history of the world's book of life. Each separate formation is a vast cemetery or mansoleum which contains the remains of the particular forms which constitued the life of the earth during each successive period.

Deposition of the Pennsylvanian period in this region was brought to a close by a movement of the earth's crust which was connected with the beginning of the uplift of the Appalachian Mountains in the east, and the Ozark dome to the south, and this area has never since been covered by the sea.

During the long perious which followed this emergence, embracing all of the Mesozoic and the greater portion of the Cenozoic eras, the surface of this region was subjected to erosion rather than deposition.

During a long time in the Cenozoic era perpetual summer reigned in this region. Later in this period an upward movement of the land, and some cause or combination of causes resulted in the lowering of the temperature over the greater part of North America. This period is known as the Pleistocene time. The three main glacial ice sheets which effected this area, in order of time, are the Kansan, Illinoisan and Iowan respectively.

To these glaciers we are indebted for two very important results. First, their load of drift filled up and completely covered the preglacial valleys. Secondly, it is to the till that we owe the depth of the fertile soil which covers the bed rock over all of this region.

The Iowan glacier effected this region but slightly and through the depositing of unusual quantities of dust by the wind.

At some time during the glacial period, in the early part in Asia, and somewhat later in this country, man crossed the threshold of the temple of life which was being built through all the preceding ages. We are introduced on the earth at this particular stage of creation, and because the changes take place so slowly that we can not note or measure their progress from day to day or from year to year we are prone to think that there is no change and that the present order of things is the same as it has been throughout the past. However, the Geology of our own region teaches us far different views of Nature and of life. Nature is always active, is ever changing. We are just now in the midst of one of God's

creative days. At the present time Man, too, has become a potent agency of change. With a fuller knowledge of Nature's laws, and an increased application of her forces his power is certain to increase more and more. To what he may accomplish or become before the end of the present geological age the highest stretch of the imagination would hesitate to limit or set the bounds.

E. Climate

Champaign-Urbana, as mentioned before, is located in the prairie region of the Middle West. The climate is characteristic of the region. Table IV gives the Temperature Data for the Urbana Weather Bureau Station for the past 28 years. The highest temperature recorded is 105° F. and the lowest temperature is minus 25° F. Table V gives the Prevailing Wind Data for Urbana and Springfield. Table VI gives the monthly rainfall at Urbana from 1902 to 1930. Table VII gives the number of clear, partly cloudy, and cloudy days by months from 1918 to April 1931 and percentages by years.

F. Population

Champaign-Urbana have had a steady growth in population due to (1) their location in the center of a rich agricultural district, and (2) the University of Illinois. The population of West Urbana in 1855 was 416. Since that time the growth of the two cities has been steady. The stretch of open prairie which separated the original towns has long since disappeared to be replaced by residences and the university buildings.

Table IV

TEMPERATURE DATA FOR URBANA WEATHER BUREAU STATION

Length of Record 28 Years

Month	Mean Temperature	Highest Temperature	Lowest Temperature
January	25.9	70	-22
February	27.7	70	-25
March	40.2	85	- 5
April	50.4	91	19
May	61.0	95	26
June	70.3	99	38
July	74.7	105 (July 28, 1930)	41
August	72.9	101	39
September	66.2	99	30
October	54.1	90	13
November	41.7	79	- 2
December	29.3	66	-20
Annual	51.2	105	-25

Table V

PREVAILING WIND DATA FOR URBANA AND SPRINGFIELD, ILLINOIS

Length of Record--Urbana, 12 years, January 1, 1918 to May 1, 1930

Springfield, 41 years, through 1920

Month	Direction of Prevailing Wind		Wind Movement--Miles per hour		
	Urbana	Springfield	Urbana Maximum	Springfield Average	Maximum
January	S. W.	N. W.	26	10.1	44
February	N. W.	N. W.	31	10.5	44
March	S.	N. W.	34	10.8	50
April	S. W.	S.	37	10.5	48
May	N. E.	S.	30	8.9	48
June	S. W.	S.	34	7.6	44
July	S. W.	S.	18	6.8	48
August	S.	S.	20	6.5	44
September	S. W.	S.	21	7.6	48
October	S.	S.	26	8.5	48
November	W.	S.	35	9.6	42
December	S. W.	S.	32	9.7	46
Annual	S. W.	S.		8.8	50

During this period the average wind movement for Urbana was 7.22

MONTHLY RAINFALL AT URBANA, ILLINOIS

Year	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1902									4.90	2.10	2.43	2.94	
1903	1.04	2.40	1.43	5.71	3.95	2.56	5.13	2.33	0.99	2.70	2.06	2.18	32.48
1904	3.09	1.86	7.66	3.97	1.60	1.17	2.72	3.55	2.53	0.81	T.	0.83	29.79
1905	1.80	2.27	0.75	2.95	4.24	1.30	5.40	2.14	2.88	3.11	1.45	1.31	29.60
1906	1.65	1.11	4.61	2.23	3.31	3.08	2.16	4.57	2.45	1.36	4.59	3.13	34.25
1907	6.09	0.24	3.34	2.34	5.04	5.56	5.41	4.42	0.94	1.51	1.99	3.32	40.20
1908	1.21	4.09	3.20	5.00	7.83	1.99	2.31	2.05	1.95	0.21	1.99	1.44	33.27
1909	2.17	5.80	1.76	7.44	5.58	3.75	7.57	2.37	2.36	2.25	3.45	2.55	47.05
1910	2.23	1.79	0.38	1.57	5.35	2.99	2.76	2.62	4.14	1.34	1.20	1.59	27.96
1911	2.27	1.19	1.85	3.59	2.44	0.82	0.62	3.35	8.90	3.10	2.83	1.35	32.31
1912	1.36	2.28	3.42	5.60	4.16	1.89	3.63	2.06	1.76	2.95	1.77	0.57	31.50
1913	5.38	1.10	5.99	2.19	0.56	1.73	1.52	1.44	2.50	4.03	4.49	0.77	31.70
1914	1.97	2.50	0.89	2.89	1.94	2.40	1.44	2.66	2.11	2.85	0.80	2.25	24.68
1915	1.61	2.33	1.12	1.59	5.11	2.98	7.30	4.90	2.58	0.64	1.02	2.85	34.23
1916	6.02	0.63	1.14	1.28	5.70	3.88	0.47	1.72	2.69	2.26	1.93	1.99	29.71
1917	1.07	0.45	4.43	3.26	4.91	6.45	2.73	3.80	2.01	2.34	0.18	0.60	32.23
1918	1.74	1.86	1.57	6.78	4.70	5.43	2.51	5.15	4.91	2.82	1.73	3.99	43.19
1919	0.21	1.92	4.12	0.75	3.29	6.90	2.04	4.47	2.47	5.59	3.37	0.12	35.25
1920	0.83	0.45	3.40	5.69	3.80	0.94	3.08	3.19	1.79	2.02	1.29	2.81	29.29
1921	1.60	0.49	5.82	5.25	5.26	1.68	2.54	4.26	5.64	2.23	4.91	1.98	41.66
1922	1.23	1.60	8.35	7.64	3.70	1.03	2.51	2.82	0.57	3.17	2.30	1.81	36.73
1923	1.57	1.34	5.25	2.96	5.26	3.20	3.26	4.08	2.99	3.78	1.68	5.01	40.38
1924	1.70	1.93	2.74	3.61	2.69	8.68	0.86	7.65	2.22	1.36	0.83	6.13	40.40
1925	0.73	1.28	4.62	1.85	0.22	2.28	1.12	3.44	5.24	4.60	2.81	1.19	29.38
1926	1.86	2.98	2.75	4.01	1.54	4.40	2.60	5.79	9.76	4.45	2.46	0.93	43.53
1927	1.67	1.22	3.84	6.48	5.01	5.87	6.02	4.79	6.27	4.15	6.77	3.55	55.64
1928	2.18	2.28	1.45	3.16	2.48	4.65	3.59	2.77	3.65	2.34	1.88	2.53	32.96
1929	3.56	0.53	2.92	6.40	7.80	2.71	6.46	4.77	0.94	3.72	1.36	2.96	44.13
1930	4.81	1.77	1.87	4.07	1.53	2.23	0.47	2.02	2.98	1.62	1.49	0.22	25.08
Means	2.12	1.78	3.38	3.74	3.94	3.16	3.01	3.44	2.98	2.38	2.13	2.20	34.26

Table VII

Records of Sunshine in Champaign-Urbana

Month	1918			1919			1920			1921		
	C	PC	Cl	C	PC	Cl	C	PC	Cl	C	PC	Cl
Jan.	9	3	19	16	6	9	12	6	13	8	7	16
Feb.	11	6	11	10	3	15	6	8	15	6	4	18
Mar.	16	6	9	13	6	12	17	3	11	4	16	11
Apr.	3	5	22	7	6	17	6	8	16	11	5	14
May	12	8	11	8	7	16	9	10	12	15	8	8
June	12	9	9	10	13	7	17	9	4	9	12	9
July	14	10	7	23	8	0	16	10	5	21	8	2
Aug.	9	13	9	19	9	3	12	8	11	9	11	11
Sept.	8	9	13	19	5	6	19	3	8	8	12	10
Oct.	11	6	14	11	1	19	17	4	10	14	7	10
Nov.	15	1	14	12	5	13	9	5	16	7	5	18
Dec.	8	6	19	9	3	19	7	5	19	7	1	23
Total	126	82	157	157	72	136	147	79	140	119	96	150
%	34.5	22.5	43.0	43.0	19.7	37.3	40.2	21.6	38.2	32.6	26.3	41.1

Month	1922			1923			1924			1925		
	C	PC	Cl	C	PC	Cl	C	PC	Cl	C	PC	Cl
Jan.	16	4	11	7	2	22	16	2	13	15	6	10
Feb.	10	4	14	8	5	15	10	4	15	8	2	18
Mar.	10	0	21	12	4	15	5	4	22	13	5	13
Apr.	10	4	16	13	2	15	15	5	13	10	10	10
May	10	5	16	11	3	17	6	11	14	13	8	10
June	17	8	5	19	3	8	5	14	11	13	4	13
July	14	11	6	16	8	7	12	13	6	13	10	8
Aug.	12	16	3	13	10	8	12	11	8	15	8	8
Sept.	22	3	5	5	7	18	13	5	12	11	6	13
Oct.	20	3	8	17	4	10	19	8	4	5	7	19
Nov.	10	4	16	11	3	16	10	6	14	12	5	13
Dec.	6	6	19	7	5	19	9	5	17	7	5	19
Total	157	68	140	139	56	170				135	76	154
%	43.0	18.7	38.3	38.1	15.4	46.5				37.0	20.8	42.2

C--Clear
PC--Partly Cloudy
Cl--Cloudy

Table VII (Continued)

Month	1926 C	1926 PC	1926 Cl	1927 C	1927 PC	1927 Cl	1928 C	1928 PC	1928 Cl	1929 C	1929 PC	1929 Cl
Jan.	7	6	18	12	4	15	15	2	14	11	4	16
Feb.	6	7	15	10	8	10	6	4	19	7	9	12
Mar.	8	6	17	10	5	16	10	7	14	11	4	16
Apr.	13	3	14	8	4	18	10	9	11	10	6	14
May	13	8	10	8	6	17	14	5	12	5	6	20
June	18	5	7	16	5	9	5	7	18	12	8	10
July	16	9	6	15	10	6	15	9	7	14	9	8
Aug.	12	9	10	14	8	9	13	13	5	20	3	8
Sept.	9	2	19	15	4	11	16	7	7	16	2	12
Oct.	9	5	17	20	2	9	12	3	16	13	0	13
Nov.	7	3	20	6	3	21	9	1	20	14	3	13
Dec.	6	6	19	15	4	12	9	7	15	13	0	18
Total	124	69	172	149	63	153	134	74	158	151	54	160
%	34.0	18.9	47.1	40.8	70.3	41.9	36.6	20.2	43.2	41.4	14.8	43.8

Month	1930 C	1930 PC	1930 Cl	1931 C	1931 PC	1931 Cl
Jan.	14	1	16	16	1	14
Feb.	9	4	15	11	2	15
Mar.	16	2	13	7	7	17
April	16	3	11	17	2	11
May	15	3	13			
June	19	3	8			
July	19	5	7			
Aug.	13	9	9			
Sept.	18	3	9			
Oct.	18	4	9			
Nov.	16	2	12			
Dec.	12	3	16			
Total	185	42	138			
%	50.7	11.5	37.8			

The following five tables were taken from the United States Census as recorded in the Illinois State Compendium, sent out by the Department of Commerce. Data is latest available.

Table VIII

Population of Champaign

Year	White	Negro	All			% increase
			Male	Female	Total	
1855					416	
1860	1696	31	911	816	1727	
1870	4502	123			4625	167
1880	4830	273			5103	10
1890	5589	250	2760	3079	5839	14
1900	8694	404	4463	4635	9098	56
1910	11662	759	6170	6251	12421	37
1920	14601°	1234	7650	8223	15873	28
1930					20332	28

° 827 Foreign born white

Table IX

Population of Urbana

Year	White	Negro	All			% increase
			Male	Female	Total	
1870	2237	40			2277	
1880					2942	29
1890	3445	66	1770	1741	3511	19
1900	5657	71	2337	2891	5728	63
1910					8245	44
1920	9909°	335	4838	5406	10244	24
1930					13058	27

° 312 Foreign born white

Table X

Population of State and University

Year	Illinois	% Incr.	Univ. of Ill.
1860	1,711,951	101.1	
1870	2,539,891	48.4	77 (1868)
1880	3,077,871	21.2	
1890	3,826,351	24.3	
1900	4,821,550	26.0	1350
1910	5,638,591	16.9	3660
1920	6,485,280	15.0	7830
1930	7,630,654	17.7	11000

Table XI

Population by Age Groups 1920

	Champaign		Urbana	
	Male	Female	Male	Female
Under 1	113	116	78	92
Under 5	629	571	475	456
5 to 9	636	583	420	440
10 to 14	601	631	434	444
15 to 19	646	718	411	460
20 to 44	3234	3556	1870	2184
45 and over	1900	2161	1217	1413
Unknown	4	3	11	9

Table XII

Illiteracy

Year	Champaign	Illinois	United States
1910	2.4%	3.7%	7.7%
1920	1.4	3.4	6.0

In addition to the recorded population there are about 12,000 students and instructors living in the twin cities during the school year. The distribution between Champaign and Urbana is about even. The population is made up of (1) business and professional men, (2) craftsmen and clerks, (3) retired farmers, and (4) teachers and students. The twin cities are characteristically suburban.

G. Organization of Board of Health

1. Urbana

The first step toward the development of a Board of Health in Urbana dates back to 1880, when the city adopted an ordinance relating to the abatement of nuisances and to general sanitary conditions. In 1882 the city council created a board of health, whose personnel consisted of the mayor and an alderman from each ward. The board had complete power in the suppression and correction of all sanitary nuisances and health measures. The Urbana City Council revised the ordinance relating to the Board of Health in 1913. The new ordinance provided for a board composed of a licensed city physician, who was chairman of the board, the school nurse, and one member from the city council. The section of the ordinance describing the appointment of the board members, is as follows:

Sect. 2: Appointment. "The Board of Health shall be appointed by the Mayor of the city, with the advice and consent of the City Council in the same manner and at the same time as the other officers are appointed. At the time of appointment the Mayor shall designate one of the said members to be chairman

of the said board, who shall be the health officer, and said chairman shall be a licensed practioner of medicine or trained in sanitary science. All members shall hold their offices from the date of appointment to the end of the municipal year and until their successors are duly appointed and qualified."

Urbana was slow to follow the example of the Champaign School Board, who had created the position of school nurse in 1911, but finally in 1913 appointed Dr. Maude E. Nichols to work as a school nurse. She is still in active duty.

The present members on the Urbana Board of Health are: Dr. Geo. F. Way, Chairman, Dr. Maude E. Nichols, School Nurse, and Alderman J. M. Gooden, representative from the City Council.

Dr. Way has served as Chairman of the Board of Health, or Health Officer, during the years 1929, 1930 and has been re-appointed by Mayor R. C. Harmon for the year 1931. His salary is $600.00 per year. His duties are many and varied, consisting of: notification and enforcement of quarantines; inspection of city dumps, restaurants, hotels, creameries, boarding houses, outside privies, schools, weedy lots, swamps, fly and mosquito breeding places, etc., for sanitary nuisances and sources of infectious diseases.

Notification of cases of communicable diseases which call for quarantine under the Illinois State Board of Health Code, are reported by the respective doctors on the cases to Dr. Way. He in turn calls Policeman Jack Clark of the Urbana Police force, whose duty it is to place the sign on the house to be quarantined, and to inform the people of the rules and regulations governing the quarantine. Mr. Clark is responsible for the people keeping

the quarantine and also for taking down the quarantine sign, after the termination of the disease and the minimum time, as stated by the Illinois State Department of Health for the particular disease, has elapsed.

Dr. Maude E. Nichols, the other member of the Board of Health, devotes most of her time to work with the school children. It is Dr. Nichols' duty to examine any children who have been absent from school on account of sickness, before they associate with the rest of the students. She examines all the school children during the year, reporting any minor defects to the parents with recommendations for their corrections. She also goes into the homes, in some cases, to see that the children who are sick are in a sanitary and clean enviornment and that they are properly cared for.

Dr. Nichols is paid $60.00 a month for her services from the City of Urbana and a like sum from the Urbana School Board.

Miss Maude G. Griffith, local registrar of births, deaths, and communicable diseases is also notified, either by Dr. Way or the Doctor treating the specific case of communicable disease. Miss Griffith reports the statistical data on births, deaths and communicable diseases to the County Clerk, and to the Illinois State Department of Public Health.

2. Champaign

The present Board of Health of Champaign was organized April 1, 1913. The Board of Health consists of:

1. Commissioner of Public Health and Safety
2. Mayor

3. City Engineer

4. City Plumber

5. Commissioner of Streets and Alleys

6. Health Officer

The Health Officer is appointed by the City Commissioners. He is the executive in health matter.

City Ordinance #315

Appropriation-----$5000.00

Section 9--Health and Safety Fund, being for the payment of the salary of the Health Officer, Sanitary Inspector, Plumbing Inspector, and the care and maintenance of the pest house, the feeding and care of patients quarantined by order of the state and county authorities, fumigation of places infested with disease and for the purchase and maintenance of all safety appliances.

Dr. Geo. C. Apoelle is the present Health Officer. His salary is $900.00 per year. The amount of time which he must devote to his duties as health officer is not specified in the city ordinance. He is in full charge of the Health Department and has the cooperation of the Police Department in carrying out his duties. At present his duties are confined to the supervision of quarantine, various members of the board having relieved him of other activities. Each morning he receives a list of the number and location of communicable diseases in the city from Miss Maude Griffith, local registrar of births, deaths and communicable diseases. Notification of cases of small pox, scarlet fever or diphtheria are immediately telephoned to the health officer, but in each case a written report must go to

the registrar within 24 hours after diagnosis. Quarantine is maintained until the termination of the disease and until the minimum period stated by the Illinois State Department of Public Health for the particular disease has elapsed.

It is the duty of the Commissioner of Public Health and Safety to supervise the finances of the Department of Health, make such recommendations to the City Council as the Health Officer requests, and in general supervise the work of the department.

In 1910 the School Board of Champaign employed a nurse to work among the school children for one or two months out of the year. This work accomplished remarkable results, and so the success of the experiment led the school board to appoint, in 1911, a full-time nurse to work in the schools. Two nurses have held the office since that date. They have reported to the Health Officer.

3. Other Public Health Organizations in the Twin Cities

A Family Welfare Society of Champaign-Urbana was organized in 1911. It did little that could be classed as public health service until in 1918 it started to participate in public health nursing, infant hygiene, etc. It established an infant welfare clinic in 1921 with Dr. Geo. C. Appelle in charge and a child guidance clinic under the direction of the Institute of Juvenile Research in 1923.

The Champaign Anti-Tuberculosis League was organized in 1912 and carried on a very active campaign with its field service intrusted first to Dr. Carrie Noble White and later to

Dr. Maude E. Nichols. Still later two nurses were employed to do the field work. Construction of the County Tuberculosis Sanitartium was started in 1920 with the addition of a medical staff in 1921.

In 1926 various voluntary and official agencies participating in public health activities were brought together into a cooperative organization known as Champaign County Public Health Association. The chairman is Dr. W. E. Schowengerdt.

4. Illinois State Board of Health

The Illinois State Board of Health was first organized in 1877 by an act of the General Assembly of the State. Its duties were manifold and its powers limited. In addition to "protection of the health of the citizens of the state" the members of the board supervised the examination and licensing of physicians, miawives and embalmers, enforced laws governing medical practice and investigated professional schools and colleges.

As originally established the board was poorly organized, so in 1917 it was changed to the State Department of Public Health and completely reorganized. At present it consists of a Director and Assistant Director and ten departments, each under the supervision of a trained chief. These departments are the Executive Division and the Divisions of Communicable Diseases, Tuberculosis, Sanitary Engineering, Vital Statistics, Child Hygiene and Public Health Nursing, Surveys and Hygiene, Diagnostic Laboratories, Hotel and Lodging House Inspection, and Public Health Education.

H. Champaign-Urbana Sewer System

Both Urbana and Champaign have separate systems of sewers. However, the storm sewers at present are not extensive. The sanitary sewers of Champaign were designed about 1895 as a comprehensive system serving the major portion of the city. The sewers vary in size from 6" to 18".

The sanitary sewers in Urbana were in part designed and constructed in 1894 and considerably extended in 1904. The sewers vary in size from 6" to 12".

The two systems of sanitary sewers are not in any way connected.

The sewage from Urbana is collected into two 12" main sewers and discharged into the 30" and 18" interceptors. The sewage from Champaign is collected into an 18", 24" and 30" interceptor. The sanitary sewers serving the University are connected to each of the two city systems.

Storm Drainage

At present there is no comprehensive system of storm sewers in Champaign-Urbana. The Boneyard branch with a number of small tributory creeks serves as an open drain through the two cities. Numberous lines of tile storm sewage drains have been built. The largest covered drain in Urbana is the large 8' Arch Culvert over the Creek between Busey and Coler Avenue from Green Street south to near Nevada Street. In Champaign the Second South Street storm sewer is the principal covered storm drain. This drain was built in 1895 from Springfield Avenue and Second Street to Clark and Neil and later has been extended along White Street to near McKinley Avenue. This is a 60"--2 ring brick sewer from

Springfield Avenue and Second Street to Oak and Second South (Logan) Street and discharges into the Boneyard Branch at Springfield Avenue. The lack of a comprehensive system of storm sewers has resulted in a considerable flooding of low areas. Coordination of the storm sewer systems of the twin cities would probably help to relieve such situations. An added burden is placed on the treatment plant by large flows of sewage at times of rain. This large flow would be markedly reduced if a more effective storm drainage system was developed for the two cities.

The interceptors constructed by the Sanitary District receive the Urbana sewage from 103,000 feet of 8" sewers, 9750 feet of 10" sewers, 5860 feet of 12" sewers, or a total of 118,500 feet or approximately 22 1/2 miles of collecting sewers. In Champaign the interceptors receive sewage from 33,900 feet of 6" sewers, 84,200 feet of 8" sewers, 9250 feet of 10" sewers, 2460 feet of 12" sewers, 3220 feet of 15" sewers, 12,860 feet of 18" sewers, or a total of 135,000 feet or approximately 27 1/2 miles of collecting sewers. The University has approximately 8450 feet of 8" sewers connected to the Urbana system and 6350 feet of 8" sewers connected to the Champaign system, intercention being provided to relieve the respective systems at places of entrance of these sewers. This data was taken from the 1927 Report of the Sanitary District.

CHAPTER II

Sewage Disposal

A. System of Treatment

Prior to 1894 no property owner in Champaign and Urbana had a right to discharge household wastes into a public sewer. An ordinance forbade the connection of buildings with drains, which were all laid with common farm drain tile and discharged into the Boneyard Branch at the nearest point. Except with the use of cesspools and some surreptitious connections with street drains, houses were bathroom-less and the primitive privy abounded. As a result the conditions in closely built-up districts and at points along Boneyard Branch became unendurable. Finally, public sentiment was aroused and a start was made in the construction of sanitary sewers, first in Urbana and then in Champaign.

Professor A. N. Talbot was put in charge of the design and construction of the work. Upon Professor Talbot's recommendation Urbana purchased fourteen acres of ground and in 1895 Champaign secured twelve acres for use in connection with sewage disposal and to permit control of the stream for a little distance. A small settling tank was built and put into action in November 1894 when the Urbana Sewer System was first put into service.

When the Champaign sewer system was under construction, a sewage tank, larger than the Urbana tank just referred to, was built on the disposal grounds owned by Champaign and near the site of the present new imhoff tanks. This septic tank was put into operation in November 1897. The sewage tank was 37 feet

long, 16 feet wide, and 7 feet deep, and was enclosed in a brick building. A centrifugal pump run by a steam engine was provided for pumping out the sludge which was discharged into a large shallow earth pit periodically. It was expected that sand filters for further purification of the sewage would be built later on the eastern part of the grounds.

Due to the rapid growth of the two towns and the very general utilization of the sewer systems, the original tanks soon became inadequate. The first settling tank of Urbana was later replaced by a somewhat larger one, not well designed. With the increased quantity and strength of the sewage, the tanks of both the Urbana and Champaign systems failed to function properly. The tanks rapidly filled with sludge after cleaning so that the sewage generally passed through without purification. The gases were given off spasmodically and quantities of the sludge were carried out with the effluent. Money was not available for building treatment works, interest in the matter was lacking and conditions in Salt Fork Creek became seriously troublesome.

During many weeks each year, the stream below Urbana was little more than an open sewer. The dilution was insufficient, since the flow of the stream would adequately dilute the sewage from only 1000 people.

By 1916 sanitary conditions were so bad that the matter was brought to the attention of the State Board of Health, which ordered the condition remedied. It was not until May 24, 1921 that a special election was held to form a Sanitary District under an act approved June 22, 1917. On June 11, 1921 the Board of Trustees of the district held their first

meeting.

On March 8, 1922, the consulting firm of Pearse, Greeley and Hansen, were authorized to proceed with a preliminary investigation of the sanitary needs of the two cities. A special election held November 28, 1922 for voting on the issuance of $500,000 in bonds, carried by a majority of about 3 to 1. April 17, 1923, English Brothers, being the lowest bidders, were awarded the contract for both the sewers and sewage disposal plant. The disposal plant and sewers were placed in operation in November, 1924. A secondary settling tank was completed in the summer of 1929, finishing all work specified in the original design of the works.

The Sanitary District consists of a rectangular area with a maximum width of 2.5 miles north and south and a length of 4.0 miles east and west. The total area within the District is 5,456 acres or 8.53 square miles with a density of population, 1930, of 6.4 per acre. This is estimated to increase by 1960 to 12.8 per acre. The assessed valuation of property in the District as reported by the County Clerk of Champaign County for 1929 is $27,283,328.00. $52,000 of the original bond issue of $500,000 have been paid and retired to date. There is no other outstanding indebtedness against the District. The cost is spread over a period of 20 years. To meet the interest and pay the principal on the bonds a yearly tax is levied not to exceed one-third of one per cent.

The plant, which has a capacity of 6,750,000 gallons per day, is located northeast of the Big Four Shops, Urbana, on the site of the old Champaign outlet, being the lowest land adjacent to the cities. The Treatment Works grounds consist of 45.68 acres. The site which the plant occupies is 697 feet above sea level, the upper end of the interceptor being 775 feet above sea level, a fall of 53 feet from its upper end to the plant. Three and one-half miles of intercepting sewers were built to relieve the overloaded sanitary sewers of Champaign and Urbana. A 30 inch and an 18 inch sewer carries the sewage to the plant for treatment. This provides intercepting sewers for a population of 70,000 at a per capita capacity of 136 to 200 gallons per 24 hours. The deepest cut for the 30 inch sewer was 20 feet. The 24 inch and 30 inch pipe were made from reinforced concrete. Tests made during construction showed that this pipe would withstand a load of approximately 6 tons before failure. Vitrified sewer pipe was used for the smaller sizes. An inverted siphon was constructed to carry the sewage under the "Boneyard" where the intercepting sewer crosses the stream.

The sketch on page 34 entitled "Sewage Disposal Plant--Imhoff Tanks and Sprinkling Filters" will be followed in the description of the Works. Fig. 4 on page 37 shows an aerial view of the Works.

SEWAGE DISPOSAL PLANT---Imhoff Tanks and Sprinkling Filters

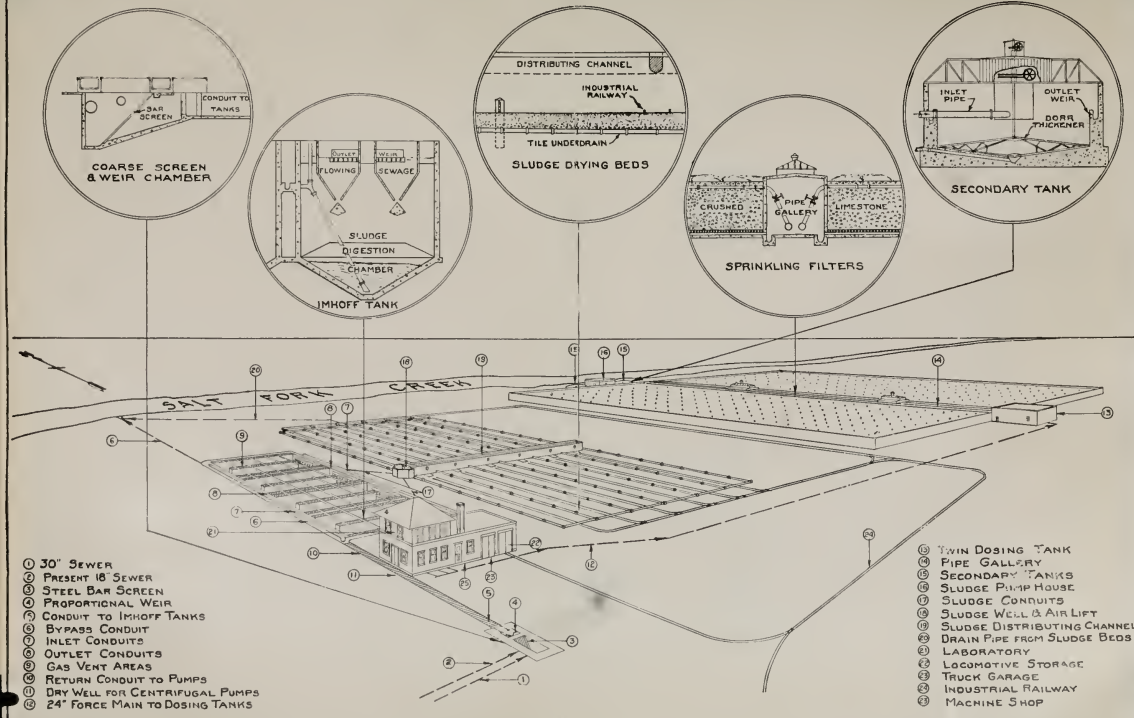


Figure IV

A FEW FACTS

CONCERNING THE WORKS

of

The Urbana and Champaign Sanitary District

PURPOSE OF THE SANITARY DISTRICT

To relieve overloaded Sanitary Sewers of the two cities and prevent human filth from polluting resident basements, the Boneyard Branch, Saline Drainage Ditch and Salt Fork Creek.

Sewage Disposal Plant Placed in Operation November, 1924.

CAPACITY OF PLANT—6,750,000 GALLONS.

THREE AND ONE-HALF MILES OF INTERCEPTING SEWERS

Gustav H. Radebaugh, District Manager.

Pearse, Greeley & Hansen, Engineers.

Figure IV

1. The Coarse Screen and Grit Chamber

The sewage is received from the 30 inch and 18 inch interceptors having a combined capacity of 9,450,000 gallons per day which is the estimated dry season flow of 1970. These interceptors are planned for a contributing population of 70,000. The sewage from the interceptors first flows through the coarse screen, which is located at the entrance to the grit chamber. It is set at an angle of 45° with the horizontal and is made up of 3/8" X 3 1/2" steel bars 15' 6" long, spaced at 2" centers. The coarse screens were cleaned 1,587 times during the year of 1929, with an average of 4 times during each 24 hours. The estimated amount of screenings removed each month during the year was about 3 4/9 cubic yards, with a total of 41 3/9 cubic yards for the year. After being removed from the screen with a hand rake, the screenings are carted in a wheelbarrow to a nearby temporary box provided with a drain. A liberal sprinkling of lime is spread over the accumulated pile each time fresh screenings are added. The box is emptied once a week. The lime treatment has always prevented excessive breeding of flies. For final disposal, the screenings are placed in low areas and covered with dried sludge.

It is estimated that during the month of October, 1929, 3/4 of a cubic yard of grit was received. In August, 1929, the grit chamber was completely cleaned for the first time

since the works were placed in operation. This was accomplished by by-passing the flow around the Coarse Screen Chamber and pumping the Screen Chamber dry, as shown in fig. VI page 37 A load of grit, shown in fig.VII, on page 37, appeared to be about 90% coal, some sand, fruit seeds, and so on. A proportional weir is placed at the exit from the grit chamber to keep the discharge proportional to the head, thus helping to maintain a fairly constant velocity through the chamber.

2. Imhoff Tanks

The discharge from the proportional weir enters a conduit which conveys the sewage to the Imhoff Tanks, in which the organic matter settles out. There are four primary settling tanks, with 12 compartments having overall dimensions of 137 feet long, 95 feet wide and 33 feet deep. Each individual tank is 76 feet long, 28 feet wide and 33 feet deep and is provided with a 3 sectional hopper bottom. The sewage enters through the inlet in the upper compartment and the solid particles settle out into the hopper bottoms. Gas is prevented from returning through the upper compartments and thus interfering with sedimentation by means of diamond-shaped concrete blocks just below the upper chamber. Instead, it passes out between the walls of the flowing-through chamber and the walls of the tank. The tanks have a displacement period of 3 hours for dry season flow and a sludge storage of 2 1/4 cubic feet per capita. To secure an even deposit of sludge in the bottoms of the tanks the direction of flow is reversed about once every four months without closing down the tanks. Sludge is removed every 3 or 4 months from the bottoms of the tanks through an iron pipe, the outlet of which is below the level

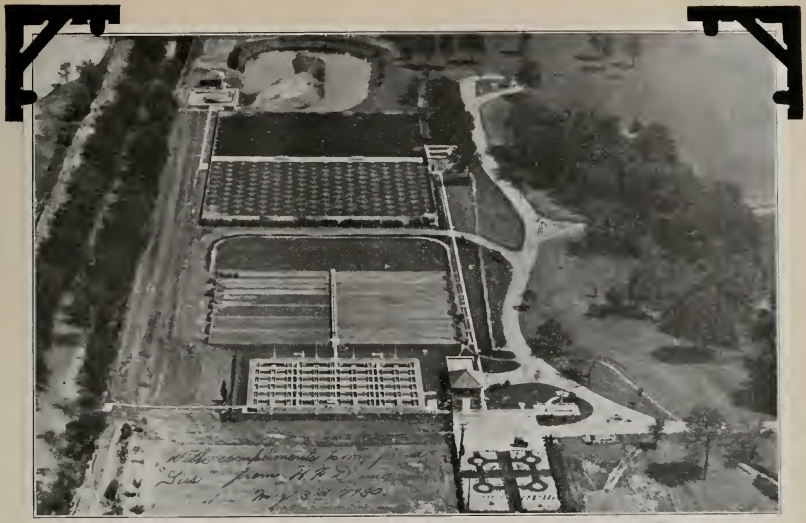


Figure V. Aerial view of the Treatment Works of the Urbana and and Champaign Sanitary District. Type of Treatment Imhoff Tanks and Sprinkling Filters with Secondary Settling Tanks. Designed for a contributing population of 45,000.

Figure VI. Pumping Sewage from Coarse Screen Chamber, permitting removal or grit.

Figure VII. A load of grit removed from Coarse Screen Chamber.

of the liquid in the tank. This eliminates pumping out the sludge. The sludge flows into a well from which it is raised by air lift to the proper elevation for distribution over the sludge beds.

To prevent excessive flows through the Imhoff tanks after heavy rains, a by-pass to Salt Fork Creek is provided.

3. Sludge Drying Beds

There are 12 open sludge drying beds in the plant with an area of 30,000 square feet or 0.75 acre. These sludge beds have a sludge drying area of 0.67 feet per capita. During the year of 1929, 1260 cubic yards of sludge, enough to fill 42 beds, were removed from the Imhoff tanks. Provision is made for extension of the bed area to 10 square feet per capita if necessary. The beds are from 12 to 18 inches deep, filled with fine sand on top to coarse gravel at the bottom, underdrained with 4 inch vitrified pipe with open joints.

The sludge drying beds are cleaned about once a year. Practically all of the dried sludge is used for fertilizer. Sludge drawn during 1929 was well digested, dried out rapidly and was free from obnoxious odors. A typical analysis of the Imhoff Tank Sludge from the Works is as follows: Specific Gravity 1.02, moisture 90% and Nitrogen 2.70%. This sludge compares favorably with the humus which is found in our woodlands and forests.

4. Dosing Tanks

Two and one-half to five million gallons daily vertical centrifugal pumps force the effluent liquid from the Imhoff

tanks into a twin dosing tank, each unit of which has a capacity of 13,000 gallons. The dosing cycle is about 10 minutes.

5. Sprinkling Filters

From the dosing tank the liquid flows to the two sprinkling filters. The filters were designed for a contributing population of 43,000 and have an outside dimension of 327 feet by 222 feet with a filtering area of 1.6 acres and the average depth of stone 10 feet. The stone used is crushed limestone, ranging in size from 1 inch to 2 inches. Each of the two units of the twin dosing tank supplies its separate nozzle field through a pipe gallery, thence through a distribution system on which round-spray nozzles are mounted. The nozzles have their base about at the level of the filter bed surface. The fields are dosed alternately, the sewage being uniformly distributed by the nozzles. Each field is 222 feet long by 157 feet wide, fed by 207 nozzles which are placed in rows 12 feet apart with the nozzles spaced at 14 feet centers in each row. The underdrainage system is of the ridge and valley type overlaid with vitrified clay brick. From the sprinkling filters the liquid flows to the secondary settling tank.

6. Secondary Settling Tank

The final settling tank, as shown in fig. VIII, is designed for a contributing population of 45,000 with a tank displacement period of 1.2 hours. The dimensions of the tank are 50

Figure VIII. Final settling tank.
Dorr Traction Type Design

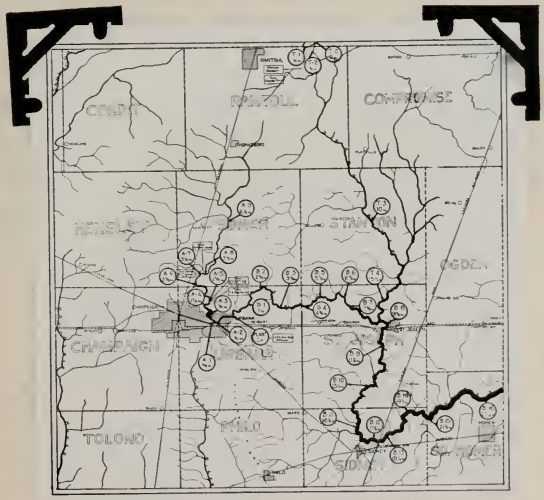


Figure IX. Salt Fork Creek and Tributaries.

feet by 50 feet with a total depth of 12 feet. It is of the Dorr Traction Type.

The pump house which is designed to take care of the settling tank is of sufficient capacity for two tanks of the above size. The equipment in the pump house is composed of two humus pumps with a capacity of 400 gallons per minute each, a water supply system for hosing Imhoff tanks with 80 gallons per minute at 30 to 50 pounds pressure and a pump for pumping out the Lagoon of 100 gallons per minute under a total head of 10 feet. The Lagoon is merely a standby unit for the Secondary Settling Tank, to be used when the tank is closed down for repairs or painting. During periods of high flow to the Secondary Settling Tank, the portion of the flow in excess of the designed-for rate of inflow to the tank overflows a weir and is discharged directly into the Salt Fork Creek.

The Secondary Settling Tank is of special value at the times when the Trickling Filters "unload".

The liquid effluent from the Secondary Settling Tank discharges into the Salt Fork Creek over a sewer outfall of broken stone . This aerates the effluent before it mixes with the waters of the stream.

7. Salt Fork Creek

Salt Fork Creek (Saline Drainage Ditch) dilutes and carries away the effluent of the Sewage Disposal Works. (Refer Fig.IX,page 40.) It has a drainage area above Urbana

of 76 square miles and is a tributary of the Big Vermilion River. It rises about 11 miles north of Champaign, flows south to Champaign, thence easterly through the north part of Urbana, continuing to flow east to the town of St. Joseph where it turns south again. Just west of St. Joseph, it joins with Spoon River.

The area which this river drains has an average yearly rainfall of 33.32 inches over a 21 year period. Charts 1 and 3 on page 43 shows the effect of Salt Fork runoff in high and low stages by months. Chart 2 on the same page shows, for purpose of comparison, the monthly treatment of sewage in million gallons. Chart 4 shows the relation of rainfall to sewage flow, compared with city water pumpage.

8. Laboratory

A completely equipped laboratory with a trained man in charge is maintained in the main building of the Works. Regular weekly tests are made on the sewage and various effluents. Chart V is a five year tabulation of records and chemical analyses. Fig. X, on page 44 shows the mobile laboratory of the State Department of Public Health which assists the plant laboratory in checking the operation of the works. This mobile laboratory is completely equipped to make several of the important water analyses that are found necessary to check on water supplies and sewage works. A report of analyses of samples from the Champaign-Urbana Sewage Treatment Works for October 23-24, 1929 is given in the table

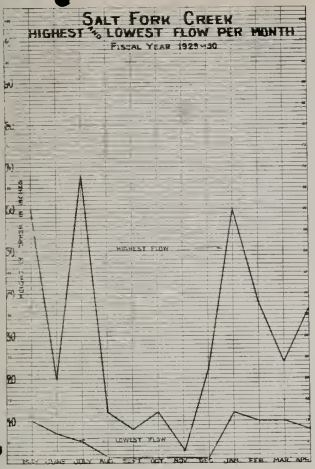

SALT FORK CREEK
HIGHEST & LOWEST FLOW PER MONTH
FISCAL YEAR 1929-30
HIGHEST FLOW
LOWEST FLOW
MAY JUNE JULY AUG SEPT OCT NOV DEC JAN FEB MAR APR

Chart 1. Salt Fork Creek. Highest and [illegible]

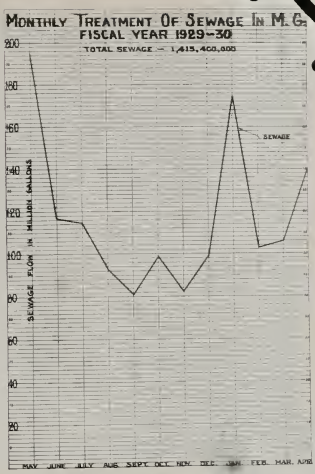

MONTHLY TREATMENT OF SEWAGE IN M. G.
FISCAL YEAR 1929-30
TOTAL SEWAGE = 1,415,460,000
SEWAGE
SEWAGE FLOW IN MILLION GALLONS
MAY JUNE JULY AUG SEPT OCT NOV DEC JAN FEB MAR APR

Chart 2. Monthly Treatment of Sewage in M. G.

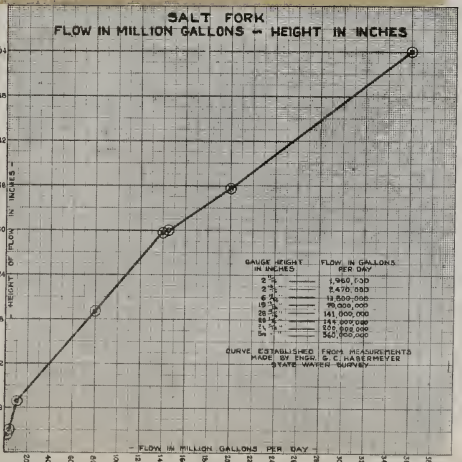

SALT FORK
FLOW IN MILLION GALLONS = HEIGHT IN INCHES
HEIGHT OF FLOW IN INCHES
GAUGE HEIGHT IN INCHES
FLOW IN GALLONS PER DAY
2 1/2 — 1,950,000
3 — 2,470,000
6 3/4 — 12,500,000
15 3/4 — 98,000,000
28 — 141,000,000
33 3/4 — 255,000,000
51 3/4 — 506,000,000
54 — 547,000,000
CURVE ESTABLISHED FROM MEASUREMENTS MADE BY ENGR. G. C. HABERMEYER STATE WATER SURVEY
FLOW IN MILLION GALLONS PER DAY

Chart 3. Salt Fork Flow in Million Gallons.

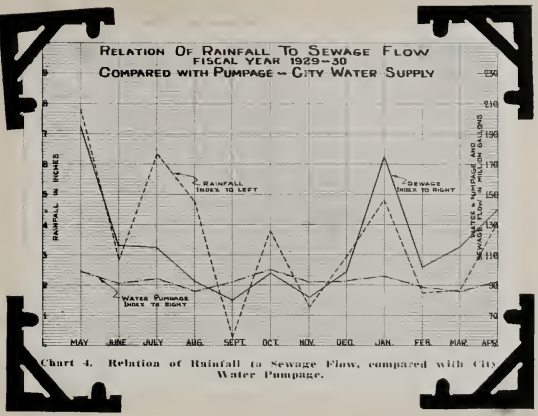


Chart 4. Relation of Rainfall to Sewage Flow, compared with City Water Pumpage.

Mobile Laboratory.
State Dept. of Public Health.

Figure X.

FIVE YEAR TABULATION OF RECORDS AND CHEMICAL ANALYSIS
SEWAGE TREATMENT WORKS — URBANA AND CHAMPAIGN SANITARY DISTRICT
AVERAGES FOR MONTH

CHART 5—Five Year Tabulation of Records and Chemical Analysis

| YEAR | MONTH | METEOROLOGICAL SUMMARY: TEMPERATURE (HIGH, LOW, MEAN) | PRECIPITATION (IN INCHES) | SALT FORK RIVER—OUTLET FOR SEWAGE TREATMENT WORKS: DISCHARGE (IN MILLIONS OF GALLONS PER DAY) | STAGE (IN FEET) | SEWAGE VOLUME RECEIVED: TOTAL (IN MILLIONS OF GALLONS) | DAILY AVERAGE (IN MILLIONS OF GALLONS) | COARSE SCREEN: TURBINE (R.P.M.) | CRUDE SEWAGE: TEMPERATURE (DEGREES FAHRENHEIT) | SUSPENDED SOLIDS (PARTS PER MILLION) | IMHOFF TANK TREATMENT: SUSPENDED SOLIDS REMOVED (PERCENT) | DISSOLVED OXYGEN CONSUMED (PARTS PER MILLION) | SLUDGE: DEPTH (IN FEET) 1 | 2 | 3 | 4 | SPRINKLING FILTER TREATMENT: DOSAGE (PARTS PER MILLION) | DOSAGE (POUNDS PER MILLION GALLONS) | DOSAGE (POUNDS PER ACRE FOOT) | DOSAGE (POUNDS PER CAPITA) | SUSPENDED SOLIDS REMOVED (PERCENT) |

[redacted]

CHART 5

[redacted]

Chart V

on page 47. Fig. XII on page 48 is a copy of the report sheet mailed monthly to the Sanitary Water Board, Springfield, Illinois.

B. Efficiency and Cost of Operation of the Works

An analysis on October 24, 1929, of the plant effluent was made by the mobile laboratory of the State Department of Public Health. This effluent was found to have a Dissolved Oxygen Content of 6.8 p. p. m. Vegetation along the stream bank at the effluent outfall is normal and fishing is considered good at this point. As mentioned in the section on sludge, the Imhoff tank sludge is of good quality and is readily dried and disposed of.

For the fiscal year, 1929-30, the operating cost of treating 1,415,400,000 gallons of sewage based on a population of 43,912 was 0.41 cents per capita. Including this cost of 0.41 cents and retirement of bonds, interest on outstanding bonds which were voted November 28, 1922, and all other corporate expenditures, excepting cost of the Secondary Settling Tank, a total of $1.39 per capita was the cost of sewage treatment. Chart 6, gives an analysis of expenditures for the fiscal year 1929-30.

REPORT OF ANALYSES OF SAMPLES FROM CHAMPAIGN & URBANA SEWAGE TREATMENT WORKS OCTOBER 23-24, 1929

Samples collected from plant were 24 hour composites weighted according to rate of flow. A slight amount of infiltration was caused by snow of October 23rd.

Samples collected from creek were grab samples:

Sewage flow by proportionate weir:

Time	Flow M.G.D.	Time	Flow M.G.D.	Time	Flow M.G.D.	Time	Flow M.G.D.
9 P. M.	4.65	3 A. M.	3.40	9 A. M.	4.50	3 P. M.	5.08
10 P. M.	4.40	4 A. M.	3.25	10 A. M.	5.10	4 P. M.	4.85
11 P. M.	4.20	5 A. M.	3.20	11 A. M.	5.15	5 P. M.	4.35
12 P. M.	4.10	6 A. M.	3.20	12 A. M.	5.15	6 P. M.	4.20
1 A. M.	4.05	7 A. M.	3.20	1 P. M.	5.08	7 P. M.	4.05
2 A. M.	3.70	8 A. M.	3.20	2 P. M.	5.08	8 P. M.	4.05

Analyses of samples. (Results in P.P.M. unless otherwise stated)

Determination	Composite Samples 24 hour				Grab Samples 3 P. M. Oct. 24	
	Raw	Imhoff	Filter	Sec. Sett.	Stream	
		Tk. Eff.	Eff.	Tank Eff.	Above	Below
Free Ammonia	20.	22.5	2.	1.6	0.0	1.0
Organic Nitrogen ..	13.6	11.1	5.2	5.2	2.0	3.64
Nitrites	.20	.16	.10	.125	.04	.11
Nitrates	.1	.1	25.?	20.?	1.0	10.
Oxygen Consumed	204.?	66.	46.	46.	3.3	18.
5 day 20° B.O.D....	222.	140.	30.	26.	7.0	14.
Total solids	736.	677.	634.	561.	473.	531.
Suspended solids ..	91.	55.	25.	19.	11.	24.
Settleable solids in cc. (Imhoff Cones)	6.cc	0.6	0.5	0.8		
Chlorides	70.	74.	84.	84.	34.	60.
Alkalinity	435.	435.	310.	325.	21.	250.

Flowing thru period of Imhoff Tanks:

Fluorescein put in bar screen at.....9:09 A. M. October 24th
Green color at tank inlets at.....9:10
Light green color at tank outlet at.....9:24
Deeper green color at tank outlet at...9:30

ANSELMO F. DAPPERT
CARL D. GROSS
Assistant Sanitary Engineers
State Department of Public Health

Figure XI

TO - TECHNICAL SECRETARY, SANITARY WATER BOARD, STATE HOUSE, SPRINGFIELD

MONTHLY REPORT, SEWAGE TREATMENT WORKS URBANA AND CHAMPAIGN SANITARY DISTRICT

LABORATORY AVERAGES Month of _____ 19____

Total Sewage Flow	_____ M.G.	Dorr Tank Avg. Hrs. Operated Daily	_____
Filters Received	_____ M.G.	Days of Snow _____ Rain	_____
Average Daily Treatment	_____ M.G.D.	Date _____ Lowest Temp. °F	_____
Date _____ Highest Flow	_____ M.G.D.	Date _____ Highest Temp. °F	_____
Date _____ Lowest Flow	_____ M.G.D.	Wind Direction Prevailing	_____
Prevented Solid Waste from Streams	_____ Tons	Creek High _____ Low	_____
Nozzles Cleaned Total	_____ Month	Creek Avg. Elevation	_____ in.
Nozzles Cleaned Avg.	_____ Daily	Coarse Screens No. Times Cleaned	_____
Total Humus Removed Dorr Tank	_____ Gals.	Coarse Screens Total Screening Removed	_____ Tons

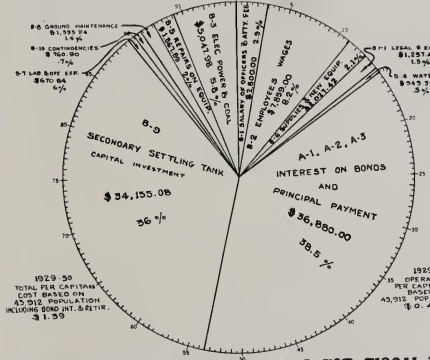
Tests & Records	Raw Sewage	Imhoff Tank Eff.	Percent Removed	Filter Eff.	Total % removed from Raw Sewage	Dorr Tank Eff.	Total % removed from Raw Sewage	Creek above Works	Creek below Works	Imhoff Tanks: Tank	pH Avg.	Sludge Drawn Feet	Elevation of Sludge
Temperature Avg.													
Turbidity										1			
Settleable Solids													
Stability										2			
Suspended Matter													
Suspended Matter lbs. per day avg.										3			
Oxygen Consumed													
Dissolved Oxygen													
B. O. D. 20.°C 5 day													
B. O. D. Lbs. per Acre per day avg.										4			
Nitrogen as Ammonia													
Nitrates													

_____. Report Sheet Mailed Monthly to Sanitary Water Board. Springfield, Ill.

Figure XII

ANALYSIS OF EXPENDITURES—FISCAL YEAR 1929-30

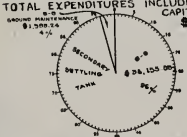
As Reported by Robt. P. McKinley
Public Accountant.


8-8 GROUND MAINTENANCE $1,393.24 1.4%
8-10 CONTINGENCIES $ 760.90 .7%
8-7 LAB & OFC EXP. $670.64 .6%
8-9 SECONDARY SETTLING TANK CAPITAL INVESTMENT
$ 34,155.08
36 %
8-3 ELECT. POWER & COAL $ 5,047.98 5.2%
8-5 SALARY OF OFFICERS & ATTY FEE $ 2,500.00 2.5%
8-2 EMPLOYEES WAGES $ 7,935.00 8.2%
8-4 EXPENSES NET $ 1,501.44 1.5%
8-11 LEGAL & ENGR FEE $1,257.40 1.3%
8-6 WATER $ 548.33 .5%
A-1, A-2, A-3 INTEREST ON BONDS AND PRINCIPAL PAYMENT
$ 36,880.00
38.5 %
1929-30 TOTAL PER CAPITA COST BASED ON 43,912 POPULATION INCLUDING BOND INT. & RETIR. $1.99
1929-30 OPERATION PER CAPITA COST BASED ON 43,912 POPULATION $0.41¢

DIVISION OF TOTAL EXPENDITURES FOR FISCAL YEAR

TOTAL MONEY RECEIVED THIS PERIOD FROM TAXES AND INTEREST
$ 96,658.22

TOTAL EXPENDITURES INCLUDING BOND INTEREST- RETIREMENT AND CAPITAL EXPENDITURES
$93,267.08



DIVISION OF CONSTRUCTION AND GROUND MAINTENANCE
$35,550.32

DIVISION OF PLANT OPERATION COST
$ 18,018.46

Chart 6

C. Relation to Health

The installation of the Sewage Disposal Plant was a much needed improvement for the twin cities and has removed a menace to the health of the community and of individuals downstream. Instead of being a conglomeration of filth, sewage, and a breeding place for disease, the Salt Fork Creek within the limits of the cities and below them is a clean stream, taken as a whole. It is necessary to point out that at times of low flow, the fact that drainage sewers empty into the Creek and that it is uncovered its full length through the town still enables enough refuse to enter it to cause objectionable conditions.

D. Criticism of Method of Treatment

The twin cities of Champaign and Urbana are fortunate in having a complete sewage treatment plant embodying the latest recognized principles of disposal of sewage. The plant has been efficiently operated since the first sewage was turned into it, and there have been no major breakdowns of equipment or other interferences to continuous operation. The present staff of the Works is courteous, conscientious and capable.

CHAPTER III

Garbage, Refuse, and Ashes

A. Method of Collection

There is no regular collection of garbage and refuse in Champaign or Urbana. The Urbana city ordinance states that the garbage and refuse must be collected and disposed of, without causing any sanitary nuisances. It was impossible to get the date this ordinance was passed, the section, or the exact wording of the ordinance. It seems as though the interpretation of the law governing a sanitary nuisance, is left to the health officer or his aids.

Champaign has provided in section 182 of the city ordinance; "every tenemant, lodging house, restaurant, boarding house, hotel, and bakery, shall have a can of galvanized iron, water tight, not less than 15 inches in diameter, 24 inches high, and have a proper and close fitting cover," for the purpose of garbage collection. Other than this, no regulation is made for the collection of garbage or refuse from the homes, hotels, and restaurants in Champaign.

The cities of Champaign and Urbana license private sanitary companies, who arrange with the individuals in the cities for the collection of their garbage and refuse.

The majority of the hotels, restaurants, and some of the house owners, hire these sanitary companies to dispose of their garbage and refuse the year around. A number of families feed

the garbage to the chickens in the summer, and burn it in the winter. Other families, and especially apartment buildings have special incinerators in which they burn their garbage.

It was impossible to get the exact number or the names of the sanitary companies operating in Urbana. The officials estimated that there were eight companies. These companies pay a license fee of $5.00 per year to the city.

The sanitary companies in Champaign pay the city $1.00 per year for an operating truck license. An interview with the city officials revealed the fact that they did not know how many companies or the names of the companies, that were operating in Champaign. An examination of the fee book, showed that the city did not have a record of any of the sanitary companies having paid their license for the year of 1931. The officials in the City Hall estimated that approximately six companies were operating in Champaign.

The authors of the survey found that the following companies were operating in the twin cities.

Sanitary Company	Office
1. Bauman Sanitary Co.	Urbana
2. Blacker-Randall Co.	Urbana
3. Pickerill Hauling Co.	Urbana
4. Randall Hauling Co.	Urbana
5. Boyd's Sanitary Co.	Champaign
6. City Sanitary Co.	Champaign
7. Decker Sanitary Co.	Champaign

There are probably several more concerns besides those

in the list, who are operating in the twin cities.

These companies are usually one or two man concerns, who use the garbage to feed chickens and hogs, and haul the refuse to the city dumps. In some cases they haul the combined refuse and garbage to the city dumps.

The cost, frequency of collection, and manner of disposal varies with the different companies. The charge for collection service averaged from $1.00 to $1.50 per month, for an ordinary dwelling house. Dwellings heated by oil or gas, in which there was no production of ashes, the charge was reduced to $1.00 to $1.25 per month. The majority of the companies collected twice a week during the summer and once a week during the winter. The other companies collected once a week during the entire year.

B. Disposal

The old Champaign City dump located northwest of the city limits, was abandoned in October 1930. Photograph #9 on page 54 is a picture of the old dump as it is today. Dumping of any kind is prohibited there now. The City of Champaign signed a ten year lease which became effective in October 1930 for some land to be used as the new city dump. This tract of land is located 1/2 mile east of the Champaign-Urbana Sewage Disposal Plant. The city pays $125.00 per month for the land, and the labor to keep the dump in sanitary condition. Mr. Dan Schaffer is in charge of the dump which at the time of the author's visit was in very good condition. Photograph #12 on page 56 shows a

Number 9

Number 10

picture of the new Champaign city dump. The men in charge of the dump had approximately 35 hogs fed on the premises. They were not relying upon any of the garbage hauled to the dump, to feed the hogs. They were using tankage from the rendering plant, discussed later in this report. The sanitary conditions around the hog pens, with the exception of a slight odor were satisfactory.

The Urbana dump is located directly east of the Champaign-Urbana Sewage Plant, approximately three blocks west of the Champaign dump. The land being used as a dump is owned by the City of Urbana. Three men, directed by Mr. Robert Price, are in charge of the dump. They are supposed to keep the dump in order, and help unload the trucks as they come to the dump, for the priviledge of scavenging any material of value that is hauled to the dump. These men salvage paper, bottles, rubber, rags, iron, wood, and other miscellaneous materials that they can sell, out of the refuse.

At the time of our visit the men at the dump were not baling paper, because of the low market price of baled paper. There was, therefore, a considerable amount of loose paper around the dump. The Urbana dump was not as well taken care of and did not have as good an appearance as the Champaign dump. The men were keeping about 50 hogs near the dump, relying upon garbage for hog feed. The dump is not treated at any time to destroy flies and vermin. Photograph #11 on page 56 is a picture of the dump.

The Busey Dump, located along the north side of the Boneyard, directly north of the Big Four Shops, in Urbana. The property is owned by one of the Busey's, who has loaned the ground to the

Number 11

Number 12

two cities, as a dump. The material dumped in this area is restricted to ashes and refuse, that will make a good fill. This piece of land is nearly filled now and the amount being dumped there is decreasing. Mr. Johnson is in charge of this dump. It was in very good condition at the time of the author's visit. Photograph #10 on page 54 is a picture of the Busey Dump.

Inspection

Champaign and Urbana each have their own dump inspector, who inspects the general appearance and sanitary conditions of the dump about once a week. The state inspector visits the dump approximately once a month. He also checks the rendering plants on his inspection trip.

Champaign-Urbana Rendering Works

The Champaign-Urbana Rendering Works is located about 1/4 mile east of the Champaign City Dump. It is operated by the same men who are in charge of the Champaign Dump. These men collect dead horses, cows, pigs, chickens, hogs, dogs, and other dead animals, plus waste meats from markets and poultry houses. They will pay $1.00 for a horse or cow and haul the animal from any farm or home within a radius of 40 miles of Champaign. The animals are skinned and their hides are tanned and sold. The rest of the carcass they cut up and place in one of two, large air tight vats. One of these tanks is about 250 gallons in size and the other about 700 gallons in size. It depends upon the amount of meat or dead animals that they are going to cook, as to which tank they will use. Steam is then turned into these tanks under 60 pounds per square inch pressure, and the meat is

allowed to cook for 2 to 2 1/2 hours. The top is then taken off of the tanks and the grease is baled out by hand. This is sold to a company in Dayton, Ohio, which is a subsidiary of Proctor & Gamble. The remaining liquid is then drained off to a near-by lagoon. The remaining solid substance, called tankage, is used as feed for hogs, or may be used for fertilizer. The water in the lagoon is treated with oil of carbolanium to kill flies and vermin and to destroy any breeding places. The water filters through the gravel subsoil into the Saline Drainage Ditch which is about 150 feet from the plant. The sanitary aspect of the plant is discussed under sanitary nuisances. Photographs #13 and #14 on page 59 show two views of the "Rendering Plant".

C. Relation to Health

The present system of garbage and refuse collection is not as efficient and sanitary as it could be. In some cases the garbage is collected only once a week. This fact coupled with the carelessness of some of the companies and individuals give rise to insanitary conditions. The garbage may become septic in warm weather, with subsequent evolution of odors. Garbage is a breeding place for flies and mosquitoes as soon as it is placed outside or into the cans. The time necessary for fly larvae to hatch is only 50 to 60 hours. This gives the flies a chance to propagate very rapidly during a week.

The pig pens and dumps to which the garbage is hauled, are located at the outskirts of the cities. The flies and odors

Number 13

Number 14

arising from some of these places do not usually affect the cities' inhabitants, but in extreme cases they can be classed as sanitary nuisances, and possible sources of disease. The present system probably does not have a material affect upon the health or sanitation of the city, but a change in manner of collection and supervision could improve the existing conditions.

D. Criticism of Methods

Champaign and Urbana can well be criticised on their methods of handling refuse. As far as could be ascertained by the authors neither Champaign nor Urbana have set forth specific rules and regulations for the handling of garbage. The house treatment is not uniform but varies, in most cases, with the wishes of the collector, which depends again upon the manner of final disposal. In general, the separate system is employed and the garbage is fed to the hogs owned by the collectors. Some of the householders wrap their garbage and in this way much of it finds its way to the city dumps causing unsatisfactory conditions there. A great many flies were found at the dump at the time of inspection, due chiefly to the presence of garbage along with the ashes and other refuse.

The lack of organization in the collection system is evident. As would be expected the type of equipment varies from small made over trucks to regular 2 ton trucks. The bodies are wooden and of the type usually used for ordinary hauling or construction work. Many of the bodies do not have rear-end gates and some of

the refuse shakes out during the haul. No provision is made for cleaning of the bodies and some of them were in quite an unsanitary condition. None of the truck bodies are covered though heavy tarpaulins are occasionally used to cover material which has a tendency to blow about. None of the bodies are water tight and liquids from the garbage may waste along the street.

Inspection of the Urbana City dump revealed an unsatisfactory condition. This dump is receiving the most refuse at the present time and due to a shortage of ashes the refuse is only partially covered. There is no water piped to any of the dumps and as a result the Urbana dump at the time of inspection was very poorly packed. There was no sale for waste paper which caused still more trouble at the dumps. No fly repellant is ever used at these dumps.

The citizens of Champaign-Urbana are paying approximately twice as much as they should for the services rendered by these small would-be sanitary companies, located at the outskirts of the city. The following figures will illustrate the above statement. The combined population of the twin cities in 1930, exclusive of the University, was 33,390. Consider 5000 residences and 50% of these having personal contracts of $12.00 per year for the collection of their refuse. This amounts to an annual sum of $30,000, which goes to the small sanitary companies. In addition the city of Champaign pays $1500.00 a year for dumping privileges.

A city of 33,000 should be able to handle their refuse collection and disposal under an organized system. The city

could take over this work, collect from every house twice a week and for half the sum paid, by approximately half the citizens, at the present time. Municipal control insures efficient and sanitary measures.

There are several advantages of municipal control which may be enumerated as follows:

1. Sanitation, not profit, is the primary consideration.
2. Greater flexibility to meet ever changing conditions.
3. Work is directly under control of Public officials whose aim is to please.
4. Less expensive.

It is felt that these advantages over-weigh any disadvantages that may arise.

It is recommended that immediate steps be taken to better conditions and to start propaganda which will show the citizens the faults of the present system. For reference to successful municipal control the authors wish to cite the city of Alton, Illinois, which in size is comparable to Champaign, Urbana. A complete description of the system at Alton may be found in the December 1929, issue of the "American City" under the title "Taking Garbage out of Politics".

CHAPTER IV

Section I

Vital Statistics

Sources

The statistical data for the survey was collected from; the Illinois State Department of Health, official monthly bulletin, "Illinois Health News"; from Volume II, "Rise and Fall of Disease in Illinois", published by the members of the Illinois State Department of Health in 1927; from D. J. Lacd's "Sanitary Survey of Champaign, Illinois"; published in 1926; and from data given by the health officers of Champaign and Urbana.

History

There are no official records of vital statistics for the State of Illinois before the passing of a law, in 1915, by the General Assembly of the State, making registration of births, deaths, still births, and communicable diseases compulsory.

The new law necessitated the installation and development of a bureau of vital statistics, which could collect and record this data. It took time and cooperation between the state and its muncipalities, to educate and instruct the doctors and health officers, and to develop a department or bureau in the towns for the collecting and recording of this statistical data. It was not until three years after

passing of the law, that the vital statistics in the state were relatively precise and reliable. The tables of statistics given in this report therefore start with those of 1913.

Vital Statistics

The vital statistics for Champaign, Urbana, and the State of Illinois are listed separately in this survey. This method of recording gives a comparison between Champaign and Urbana, and their respective relations to the state statistics.

The estimated population as recorded in table #XIII is based upon the U. S. Census, the yearly school census, and the report of the Illinois State Department of Health. The inter census are estimated by the arithmetical method of population prediction.

Births and Marriages

The birth rate in Champaign had a steady rise from 1912 to 1927, a period of nine years, but has dropped off 4.7 points in the last three years. The city Urbana birth rate remained stationary at a lower level than Champaign from 1919 to 1927, but has shown an increase in the last three years. It now has a higher birth rate than Champaign. The number of births in the state has a steady increase until 1924, but has had a gradual decrease since then. The number of births in Champaign, Urbana, and the state, not including still births are shown in table #XIV

Table XIII

Estimated Population

Year	Champaign	Urbana	Illinois
1910	12,421	8,245	5,638,591
1915	14,147	9,246	6,061,935
1918	15,183	9,838	6,315,942
1919	15,528	10,039	6,400,611
1920	15,873	10,244	6,485,280
1921	16,851	10,545	6,616,099
1922	17,186	10,745	6,703,312
1923	17,521	10,946	6,790,524
1924	17,856	11,147	6,877,737
1925	18,191	11,348	6,964,950
1926	18,500	11,520	7,139,470
1927	18,800	11,700	7,314,000
1928	19,100	11,900	7,396,000
1929	19,400	12,100	7,478,000
1930	20,332	13,058	7,607,684

Table XIV

Births

Year	Champaign		Urbana		Illinois	
	No.	Rate	No.	Rate	No.	Rate
1919	287	18.5	181	18.0	119,822	18.6
1920	291	18.1	176	17.5	135,871	20.8
1921	368	22.4	162	15.4	144,637	21.8
1922	331	19.3	126	11.7	138,305	20.7
1923	356	20.3	162	14.8	138,055	20.3
1924	390	21.8	210	18.8	142,176	20.7
1925	409	22.48	207	18.24	135,437	19.44
1926	407	22.0	165	14.3	137,886	19.1
1927	448	23.82	186	15.39	153,662	18.27
1928	385	20.05	220	18.48	129,666	17.53
1929	365	18.40	244	19.83	128,634	17.20
1930	381	19.10	240	19.80	-------	-----

Rate per 1000 people

The data available showed the number of marriages in Champaign County. Since both Champaign and Urbana are in Champaign County this information wasn't considered of value, and therefor was not included in the survey.

Still Births

The statistics regarding still births are not available for Champaign and Urbana before 1921. The rate for Champaign from 1921 to 1926 was considerably higher than the state rate. The rate has gradually decreased in the last four years until it now compares very favorably with the state rate. Urbana has had a much better showing, for except the years of 1924 and 1929 it has had a much lower "still birth" rate than the state. The statistics for still births are given in table #XV.

Deaths

The world wide influenza pandemic of 1918 was responsible for the high death rate in Champaign and Urbana in 1918. Since 1918 the death rate has been quite constant and compares very favorably with the state death rate. Urbana's death rate has varied more than Champaign's, but this can be explained by the fact that for only a small difference in the number of deaths in Urbana there will be a much greater variation in the rate. The average death rate for Urbana over a period of 12 years is some higher than the state rate, but this is not due to any existing sanitary nuisances. The number of deaths and death rates per 1000 population is given in table #XVI.

Table XV

Still Births

Year	Champaign		Urbana		Illinois	
	No.	Rate	No.	Rate	No.	Rate
1921	13	0.79	5	0.48	5375	0.81
1922	16	0.93	5	0.46	4878	0.72
1923	20	1.14	5	0.45	5167	0.76
1924	11	0.61	10	0.89	5299	0.77
1925	20	1.09%	4	0.35	4844	0.70%
1926	--	----	-	----	----	----
1927	12	0.63	5	0.47	4701	0.64
1928	15	0.78	7	0.58	4678	0.63
1929	13	0.67	8	0.66	4459	0.59

Rates per 1000 population

Table XVI Deaths

year	Champaign		Urbana		Illinois	
	No.	Rate	No.	Rate	No.	Rate
1918	265	17.1	201	20.4	100,862	15.9
1919	217	13.7	159	15.5	77,663	12.1
1920	224	12.4	120	11.7	82,811	12.7
1921	203	12.3	79	7.5	73,409	11.1
1922	227	15.2	85	7.9	75,971	11.3
1923	202	11.5	108	9.9	82,034	12.1
1924	216	12.1	147	13.2	77,331	11.2
1925	236	12.97	147	12.95	81,596	11.71
1926	---	----	---	----	85,329	11.9
1927	211	11.22	146	12.47	82,849	11.32
1928	-224	11.53	-150	12.60	90,194	12.19
1929	-208	10.67	-161	13.38	87,789	11.7
1930	-220	11.00	-154	12.80	------	----

Rates per 1000 population

Specific Death Rates

Typhoid Fever

Table #17 shows the mortality of typhoid fever in Urbana, Champaign, and the State of Illinois. The rates give very little information and fluctuate widely for the twin cities for one death will make a difference of 5 points in the rate. Table #17 gives the rates per 100,000 population.

Table XVII

Mortality of Typoid Fever

Year	Champaign		Urbana		Illinois	
	No.	Rate	No.	Rate	No.	Rate
1918	0	0.0	1	10.1	517	8.2
1919	2	12.8	0	0.0	377	5.9
1920	0	0.0	1	9.7	378	5.8
1921	1	5.9	1	9.5	397	6.0
1922	0	0.0	2	18.6	282	4.2
1923	2	11.4	0	0.0	319	4.7
1924	0	0.0	0	0.0	241	3.5
1925	0	0.0	1	8.8	321	4.6
1926	0	0.0	0	0.0	230	3.2
1927	0	0.0	1	8.5	175	2.4
1928	0	0.0	0	0.0	160	2.2
1929	0	0.0	0	0.0	110	1.4

Tubercolosis

The mortality of tubercolosis has decreased over 50% in the State of Illinois from 1918 to 1930, a period of 12 years.

The mortality rate of tubercolosis for Champaign and Urbana during the same period have not only shown this marked decrease, but they also have had a lower rate than the state rate of mortality. This wonderful work of the Anti-Tubercolosis League, which was organized in 1912, can be given much credit for this great showing. They have carried on a very active champaign since their organization. The field work was first entrusted to Dr. Carrie Noble White, and later to Dr. Maude E. Nichols. Later another nurse was added to help Dr. Nichols in her work. The construction of the County Tubercolosis Santitarium, "Outlook" was started in 1920 with the addition of a medical staff in 1921.

Table XVIII

Mortality of Tubercolosis

Year	Champaign		Urbana		Illinois	
	No.	Rate	No.	Rate	No.	Rate
1918	14	92.2	15	152.4	---	135.8
1919	17	109.4	12	119.5	---	105.3
1920	13	80.4	7	68.3	---	86.2
1921	7	42.6	9	85.2	---	70.3
1922	6	34.9	4	37.2	---	82.6
1923	5	28.5	6	54.8	---	81.7
1924	12	67.4	10	90.0	---	81.2
1925	11	60.4	6	52.7	---	79.7
1926	11	59.4	10	87.0	5495	76.3
1927	9	47.6	9	67.3	5574	76.2
1928	11	57.5	11	97.7	5441	73.5
1929	9	46.3	4	33.0	5243	70.1

Measles

The morbidity and mortality of measles have been very low in Champaign and Urbana, except for the two epidemics of 1918 and 1920. Table #19 shows that there has only been seven deaths due to measles, in the twin cities, over a period of 10 years.

Table XIX

Mortality of Measles

Year	Champaign		Urbana		Illinois	
	No.	Rate	No.	Rate	No.	Rate
1918	-	---	0	0.0	---	5.0
1919	1	6.4	0	0.0	---	6.9
1920	0	0.0	0	0.0	---	5.4
1921	0	0.0	0	0.0	---	2.1
1922	1	5.8	0	0.0	---	3.3
1923	1	5.7	1	9.1	---	4.0
1924	0	0.0	0	0.0	---	3.2
1925	2	10.9	0	0.0	---	3.0
1926	0	0.0	0	0.0	346	4.8
1927	0	0.0	1	8.5	294	4.0
1928	0	0.0	0	0.0	84	1.1
1929	0	0.0	0	0.0	275	3.6

Small Pox

The morbidity rate of Small Pox for Champaign and Urbana has been equal to the state rate. This is due to the fact that vaccination is not compulsory and much of the population is not vaccinated. There hasn't been a death due to Small Pox, as shown in Table #20, since 1918.

Table XX.

Mortality of Small Pox

Year	Champaign		Urbana		Illinois	
	No.	Rate	No.	Rate	No.	Rate
1918	0	0.0	0	0.0	Not obtainable	
1919	0	0.0	0	0.0	"	"
1920	0	0.0	0	0.0	"	"
1921	0	0.0	0	0.0	"	"
1922	0	0.0	0	0.0	"	"
1923	0	0.0	0	0.0	"	"
1924	0	0.0	0	0.0	"	"
1925	0	0.0	0	0.0	"	"
1926	0	0.0	0	0.0	8	.11
1927	0	0.0	0	0.0	3	.04
1928	0	0.0	0	0.0	5	.06
1929	0	0.0	0	0.0	17	.20

Rate per 100,000 population

Scarlet Fever

The morbidity of scarlet fever in Champaign and Urbana has been low except during the year of 1919 and the year 1920. The mortality due to scarlet fever in the cities has also been low. Statistics in Table #21 show that there have been seven deaths in the twin cities due to Scarlet Fever since 1918.

Table XXI

Mortality of Scarlet Fever

Year	Champaign		Urbana		Illinois	
	No.	Rate	No.	Rate	No.	Rate
1918	0	0.0	0	0.0	---	2.3
1919	2	12.3	0	0.0	---	5.6
1920	1	6.2	0	0.0	---	5.6
1921	2	12.1	0	0.0	---	3.9
1922	0	0.0	0	0.0	---	3.9
1923	0	0.0	0	0.0	---	3.5
1924	0	0.0	0	0.0	---	3.0
1925	0	0.0	0	0.0	---	3.3
1926	0	0.0	0	0.0	233	3.2
1927	1	5.3	0	0.0	169	2.3
1928	0	0.0	0	0.0	156	2.1
1929	0	0.0	1	3.2	303	4.0

Section II

Blank Forms

Each death, birth, still birth, morbidity and mortality of each disease must be reported to the local registrar of vital statistics. There are special forms that have to be filled out, in order that the reporting of the vital statistics may be uniform and permanent. On the following pages will be found standard forms used in reporting vital statistics in the twin cities.

A. Report of the Disease

B. Report of Recovery of Disease

C. Quarantine Notice

D. Certificate of Birth

E. Certificate of Still Birth

F. Certificate of Death

CITY OF CHAMPAIGN HEALTH DEPARTMENT
REPORT OF INFECTIOUS AND CONTAGIOUS DISEASES

_____ 19____

Name of patient_____ Sex_____ Age_____ yrs.

Residence of patient_____ Married..... Color_____
Street Number Or Single.....

Diagnosis_____

No. of children in family_____ School_____ Room_____

Probable source of infection, if known_____

Does patient handle foodstuffs?_____ Remarks_____

_____

Reported by_____ Address_____

INSTRUCTIONS:—This report must be mailed or delivered so as to be in the office of the City Health Department at the City Building within 24 hours after discovery of case.

NOTE:—All contagious diseases should be reported to Health Department, City Bldg., at once by telephone so that quarantine can be established immediately.

However, the written report must be made as directed.

All communications of any character relating to the work of the health department must be addressed to the Health Department, City Bldg.

Form A. Report of Disease

CITY OF CHAMPAIGN HEALTH DEPARTMENT

Report of Recovery of Infectious and Contagious Diseases

Date..... 192 ..

I have been the attending physician of

....

Name of Patient Address

and have last examined..... on..... 192..... and find

Him or Her Date

.....fully recovered.

Him or Her

Physician.....

NOTE:—No quarantine will be raised until this written report has been filed with the health department.

Form B. Report of Recovery of Disease.

QUARANTINE For.....

For.....

You are hereby notified that this residence is quarantined under the State Law and local ordinance.

A card will be placed on your residence and no one allowed to leave the premises until the quarantine is raised, without permission of the Health Officer, or this card has been removed by the Health Officer or member of the Police force, no other person having authority to do so.

Any persons violating this law will subject themselves to a fine not to exceed $200 for each offense, or an imprisonment in the county jail not to exceed six months, or both.

BY ORDER OF THE BOARD OF HEALTH.

.....Police Officer.

Dated.....

Form C. Quarantine Notice.

1930 REVISION

V. S. NO. 3

(49107—50M—12-30)

MARGIN RESERVED FOR BINDING. Write plainly with Unfading Ink.—This is a Permanent Record.
NOTE: Local Registrars must make this record complete and accurate, and forward this copy to County Clerk on 10th day of each month. Omissions or abbreviations must not be made.

Local Registrars MUST NOT issue this form to Physicians, Midwives or others, but must use it only for preparing County Clerk's (or Local Registrar's) COPY.

N. B.—In case of more than one child born at a birth, a separate certificate must be made for each, and the number of each, in order of birth, stated. In case of Plural Births, Local Registrars will note here the Registered Nos. of Certificates of "Mates" and show whether Births or Stillbirths.

1. PLACE OF BIRTH — Registration Dist. No.

County of .....

*Township / *Road Dist. / *Village / *City — Primary Dist. No.

*(Cancel the three terms not applicable—Do not enter "R. R.," "R. F. D.," or other P. O. address).

Street and Number, No. ..... St., Ward, ...

STATE OF ILLINOIS
Department of Public Health—Division of Vital Statistics
COUNTY CLERK'S RECORD

CERTIFICATE OF BIRTH

Registered No. ..... (Consecutive No.)

Hospital (If birth occurred in hospital or institution, give its name instead of street and number.)

If child is not yet named, make supplemental report, as directed.

2. FULL NAME OF CHILD .....

3. Sex of Child | 4. Twin, Triplet or other? (To be answered only in the event of plural births) | 5. Number in order of birth | 6. Premature Full term | 7. Legitimate? | 8. Date of birth ..... (Month, day, year), 193....

FATHER

9. Full name

10. Residence (usual place of abode) (If nonresident, give place and State)

11. Color or race | 12. Age at last birthday ..... (Years)

13. Birthplace (city or place) (State or country)

OCCUPATION

14. Trade, profession, or particular kind of work done, as spinner, sawyer, bookkeeper, etc.

15. Industry or business in which work was done, as silk mill, sawmill, bank, etc.

16. Date (month and year) last engaged in this work ....., 19.... | 17. Total time (years) spent in this work

MOTHER

18. Full maiden name

19. Residence (usual place of abode) (If nonresident, give place and State)

20. Color or race | 21. Age at last birthday ..... (Years)

22. Birthplace (city or place) (State or country)

OCCUPATION

23. Trade, profession, or particular kind of work done, as housekeeper, typist, nurse, clerk, etc.

24. Industry or business in which work was done, as own home, lawyer's office, silk mill, etc.

25. Date (month and year) last engaged in this work ....., 19.... | 26. Total time (years) spent in this work

27. Number of children of this mother (at moment of this birth and including this child) (a) Born alive and now living ..... (b) Born alive but now dead ..... (c) Stillborn .....

28. What treatment was given child's eyes at birth?

28. CERTIFICATE OF ATTENDING PHYSICIAN OR MIDWIFE*

I hereby certify that I attended the birth of this child, who was BORN ALIVE at .....M., on the date above stated.

*Where there is no attending physician or midwife, then the father, mother, householder, etc., shall make this return. See Sec. 12, vital statistics law.

29. (Signature) ..... M. D. / Midwife
(Physician or Midwife)

30. Given name added from a supplemental report ....., 193....
(Month) (Day) (Year)

Registrar.

Address ..... Telephone .....

Date Certificate Signed ..... 193....
(Month) (Day) (Year)

31. Filed ..... 193.... Registrar

Post Office Address .....

Form D. Birth Certificate.

V. S. No. 8 MARGIN RESERVED FOR BINDING. Write Plainly with Unfading Ink—This is a Permanent Record

NOTE: Local Registrars must make on this form a complete and accurate copy of the Original Certificate, and forward this copy to County Clerk on 10th day of each month. Omissions or abbreviations must not be made.

Local Registrars MUST NOT issue this form to Physicians, Midwives, or others, but must use it only for preparing County Clerk's (or Local Registrar's) Copies.

N. B.—In case of twin or triplet stillbirths, a separate certificate must be made for each stillbirth.

•In case of Plural Births, Local Registrars will note here the Registered Nos. of Certificates of "Mates" and show whether Births or Stillbirths.

1. PLACE OF STILLBIRTH — Registration Dist. No. .....

County of .....

..... •Township / •Road Dist. / •Village / •City — Primary Dist. No. .....

•(Cancel the three terms not applicable —Do not enter "R. R.," "R. F. D.," or other P. O. address).

Street and Number, No. ....., ... St., ... Ward, ... Hospital

(If stillbirth occurred in hospital or institution, give its name instead of street and number.)

STATE OF ILLINOIS
Department of Public Health—Division of Vital Statistics

COUNTY CLERK'S RECORD

Certificate of Stillbirth

Registered No. .....
(Consecutive No.)

2. NAME OF CHILD .....

3. Sex of Child | *4. Twin, triplet or other? ..... (To be answered only in event of plural births.) | 5. Number in order of birth..... | 6. Legitimate? | 7. Date of stillbirth....., ..., 19..... (Month) (Day) (Year)

FATHER

8. Full Name .....

9. Residence (P. O. Address).....

10. Color — 11. Age at Last Birthday.....Years

12. Birthplace (City or Place).....

(Name State if in U. S.).....

(Name Country, if Foreign).....

13. Occupation .....

(Nature of Industry).....

MOTHER

14. Full Maiden Name .....

15. Residence (P. O. Address).....

16. Color — 17. Age at Last Birthday.....Years

18. Birthplace (City or Place).....

(Name State if in U. S.).....

(Nams Country, if Foreign).....

19. Occupation .....

(Nature of Industry).....

20. NUMBER OF CHILDREN OF THIS MOTHER (Taken as of time of birth of child herein certified and including this child.) (a) Born alive and now living..... (b) Born alive but now dead..... (c) Stillborn .....

21. Informant ..... (Personal signature with pen and ink) 22. P. O. Address.....

CERTIFICATE OF ATTENDING PHYSICIAN OR MIDWIFE

23. I hereby certify that I attended the birth of this child, which was BORN DEAD....., 19....., ...M. (Month) (Day) (Year) (Hour)

24. Period of uterogestation.....(Months) 25. Cause of Stillbirth.....

26. Signature of attendant ..... M. D. Midwife 27. Address..... Telephone.....

CERTIFICATE OF UNDERTAKER

28. Place of Burial Cremation or Removal..... 29. Date ..... 19..... (Month) (Day) (Year)

30. Undertaker ..... (Personal signature with pen and ink)

..... (Firm name, if any) 31. Address of Undertaker .....

32. Date filed ..... 19..... 33. ..... Registrar

34. P. O. Address .....

(19951—8M—6-29) 9

Form E. Still Birth Certificate.

MARGIN RESERVED FOR BINDING

WRITE PLAINLY, WITH UNFADING INK—THIS IS A PERMANENT RECORD

NOTE: Local Registrars must make on this form a complete and accurate copy of the Original Certificate, and forward this copy to County Clerk on 10th day of each month. Omissions or abbreviations must not be made.

Local Registrars must not issue this form to Undertakers, Physicians or others, but must use it only for preparing County Clerk's (or Local Registrar's) Copies.

V. S. 4B

(21512—15M—7-29) 2

STATE OF ILLINOIS

COUNTY CLERK'S RECORD

Department of Public Health—Division of Vital Statistics

STANDARD CERTIFICATE OF DEATH

Registered No. ..... (Consecutive No.)

1. PLACE OF DEATH | Registration Dist. No. .....

County of .....

..... *Township / *Road Dist. / *Village / *City — Primary Dist. No. .....

*(Cancel the three terms not applicable —Do not enter "R. R.," "R. F. D.," or other P. O. address).

Street and Number, No. ....., ... St.; ..... Ward, ... Hospital
(If death occurred in hospital or institution, give its name instead of street and number)

2. FULL NAME .....

(a) Residence No. ....., ... St.; ..... Ward, ...
(Usual place of abode) (If non-resident give city or town and State)

Length of residence in city or town where death occurred ..... yrs. ..... mos. ..... ds. How long in U. S. if of foreign birth? ..... yrs. ..... mos. ..... ds.

PERSONAL AND STATISTICAL PARTICULARS

3. SEX	4. COLOR OR RACE	5. SINGLE, MARRIED, WIDOWED, or DIVORCED (write the word)

5a. If married, widowed or divorced
HUSBAND of
(or) WIFE of

6. DATE OF BIRTH

..... (Month) ..... (Day) ....., 1..... (Year)

7. AGE	Years	Months	Days	IF LESS than 1 day .....hrs. OR .....mln.?

8. OCCUPATION OF DECEASED
(a) Trade, profession, or particular kind of work .....
(b) General nature of industry, business, or establishment in which employed (or employer) .....
(c) Name of employer .....

9. BIRTHPLACE (city or town) .....
(State or Country) .....

PARENTS

10. NAME OF FATHER

11. BIRTHPLACE OF FATHER
(City or Town) .....
(State or Country) .....

12. MAIDEN NAME OF MOTHER

13. BIRTHPLACE OF MOTHER
(City or Town) .....
(State or Country) .....

14. INFORMANT .....
(personal signature with pen and ink)
P. O. Address .....

15. Filed ....., 19..... Registrar.
P. O. Address ..... Ill.

CORONER'S CERTIFICATE OF DEATH

16. DATE OF DEATH
....., 19.....
(Month) (Day) (Year)

17. I HEREBY CERTIFY, That I took charge of the remains of the deceased herein described, held an ..... thereon and from (Inquest, Autopsy or Inquiry) the evidence obtained find that said deceased came to ..... (His or Her) death on the date stated above and that the CAUSE OF DEATH* was as follows:

.....

.....

.....(Duration) ..... yrs. .....mos. .....ds.

Contributory (Secondary) .....

(Duration) .....yrs. .....mos. .....ds.

INJURY rec'd in ..... *Township / *Road Dist. / *Village / *City
*(Cancel the three terms not applicable.)

(Signed) ..... Coroner

By ..... Deputy Coroner

Address .....

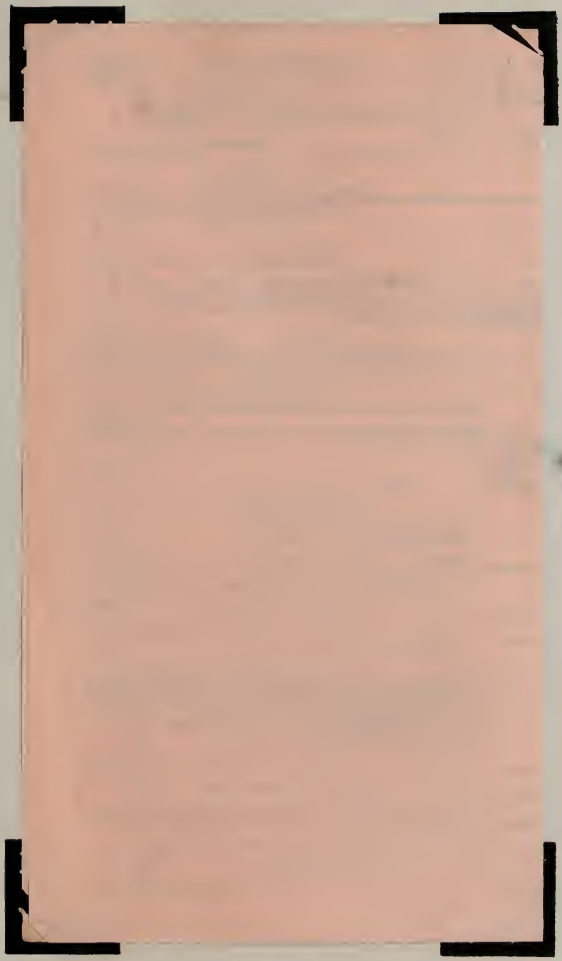
Date ....., 19..... Telephone .....

*State the Disease Causing Death, or in deaths from Violent Causes, state (1) Means of Injury; and (2) whether Accidental, Suicidal, or Homicidal.

18. PLACE OF BURIAL, Cremation or Removal	20. DATE
Cemetery	....., 19.....
Location ..... (Township, Road Dist., Village or City)	
County ....., State	

19. UNDERTAKER	ADDRESS
..... (personal signature with pen and ink)	
..... (firm name, if any)	

Has decedent ever served in military or naval service of U. S.? .....



Form F. Death Certificate.

Section III

Thoroughness of Reporting

There is no practical method whereby the health authorities can check up on each individual doctor, to see that he is complying with the rules and regulations governing the reporting of vital statistics. There are those doctors in each community, therefor, who forget, are too busy, or who do not believe in vital statistics, who are not thorough in reporting vital statistics. No good could possibly come from trying to use pressure and force these few doctors to comply with the rules. The Champaign County Medical Society, whose membership includes all but one or two of the doctors in Champaign and Urbana have adopted a different and more successful policy. They use the policy of diplomacy, education, and persuasion, rather than pressure in trying to attain a 100% response in reporting vital statistics.

The health authorities of the two towns have cooperated with the Champaign County Medical Society in this continuous drive for thorough reporting of vital statistics. The success of the work of these two organizations is displayed in the fact that from 85 to 95% of the cases of vital statistics are now being reported.

Section III

Thoroughness of Reporting

There is no practical method whereby the health authorities can check up on each individual doctor, to see that he is complying with the rules and regulations governing the reporting of vital statistics. There are those doctors in each community, therefor, who forget, are too busy, or who do not believe in vital statistics, who are not thorough in reporting vital statistics. No good could possibly come from trying to use pressure and force these few doctors to comply with the rules. The Champaign County Medical Society, whose membership includes all but one or two of the doctors in Champaign and Urbana have adopted a different and more successful policy. They use the policy of diplomacy, education, and persuasion, rather than pressure in trying to attain a 100% response in reporting vital statistics.

The health authorities of the two towns have cooperated with the Champaign County Medical Society in this continuous drive for thorough reporting of vital statistics. The success of the work of these two organizations is displayed in the fact that from 85 to 95% of the cases of vital statistics are now being reported.

the premise in question to investigate the complaint. If he considers the complaint justified, he issues verbal directions that the nuisance be abated. If this is not productive of improvement, he secures a court order against the defendant to correct the undesirable conditions.

The health officer in Urbana handles the complaints regarding sanitary nuisances in that city.

Champaign and Urbana do not have any large industrial concerns, therefore odors, smoke, and noises from industrial sources do not exist to any appreciable extent. The gas house in Champaign, located on N. 5th Street sometimes causes noticeable odors in the immediate neighborhood. A few of the small industrial and business concerns contribute to the smoke problem. One of the outstanding offenders in the twin cities is the University Power Plant. Others of importance are the locomotives of the Big Four Railroad where they pass through Urbana and Champaign and those of the Illinois Central Railroad where they pass through Champaign.

Several photographs are included in this chapter and Chapter III to illustrate undesirable conditions in the twin cities. Number 1, page 81 shows a lot on N. Neil Street, Champaign, alongside the Big Four Tracks, which is used as an auto wrecking establishment's junk yard. Number 2, page 81 is a scene of a vacant lot, located just east of the Champaign gas house, used as a dumping ground for debris from a stone cutting plant. Number 3, page 82 is a photo-

Number 1

Number 2

Number 3

Number 4

graph of a street in North Champaign that is in poor condition, extremely muddy in rainy weather and very dusty in dry weather. Number 4, page 82 shows a poorly kept lot in North Champaign. Considerable debris has been dumped alongside the barn, and there is an outside privy on the left of the barn. Number 5, page 84 shows a stretch of "the Boneyard" that is in an undesirable condition. The view is downstream looking east, taken two blocks west of Wright Street, Champaign. This creek is a source of odors at times of low water stages. Considerable debris finds a resting place on the creek bottom and banks. Number 6, page 84 shows an alley in the rear of one of the main business blocks on N. Neil Street. This alley was strewn with refuse and garbage, thereby being a source of odors and an attraction and aid to rats and vermin. Number 7, page 85 shows an alley in the Champaign Negro District near the north limit of the city. A poorly kept chicken yard is enclosed by the board fence that may be readily seen on the extreme left of the picture. A row of outside privies line the alley its entire length. Number 8 on page 85 shows an alley north of the Big Four Shops in Urbana that is lined with outside privies. The back yards along this alley were badly kept up, and there was considerable odor in the vicinity. Number 9 on page 54 is a photograph of the old Champaign dump where dumping is now prohibited. This property is in good condition. Number 10 on page 54 gives a view of Busey's Dump in East Urbana, This dump is

Number 5

Number 6

Number 7

Number 8

fairly well kept but by its nature is a breeding place for rats, flies, and vermin. Number 11 on page 56 shows the Urbana Dump, east of the Urbana city limits, that is in poor shape. A considerable amount of unwrapped garbage is mixed with the rubbish and creates an undesirable condition that is very objectionable in warm weather. It is an ideal breeding place for rats, flies, and vermin as well as a source of odors. Nothing is done here to prevent a nuisance except to cover occasionally a portion of this mixed refuse with ashes or dirt. Number 12 on page 56 shows the well-kept dumping grounds leased by the city of Champaign. This property is in very good shape due partly to the good care which it receives and partly to the small amount of rubbish which it has received to date, the greater part of Champaign's rubbish now being dumped on private property (the Busey Dump) to fill in low land. Number 13 on page 59 shows the rendering works located about 1000 feet northeast of the Champaign city dump. This plant is operated by a private owner to reclaim saleable material from animals that die in or near the twin cities. His revenue is derived from such products as hides, grease, and tankage. Number 14 on page 59 shows the lagoon alongside the rendering plant into which the waste effluent from the tanks is emptied. The liquor seeps through the underlying gravel deposits and reaches Salt Fork Creek about 200 feet away. The odor in the immediate vicinity of these works is severe but is not particularly offensive a short distance

away. This is probably due to the fact that the plant is located in a hollow and is well-screened by trees. The scarcity of water supplies, excepting water dipped by hand from the Salt Fork Creek itself, leads to insanitary conditions around the plant. Flies breed in great numbers in the many favorable places in and near the building.

Photograph number 15, on page 66, shows Crystal Lake located in a park in Northeast Urbana. This lake is a large, shallow body of water that is used for boating and canoeing in the warm months of the year. At many points along the shores of this lake the water is stagnant, affording good breeding places for mosquitoes. Both Culex and Anopheles are present in Champaign and Urbana, but they have not presented a problem in recent years. Formerly the existence of large marshy stretches in the vicinity of the twin cities necessitated the digging of large drainage ditches. The ditches have aided considerably in controlling mosquitoes.

Due to the general cleanliness that prevails in the twin cities, there is no fly problem.

The situation, as regards rats and vermin, is well under control. Some years ago a vigorous campaign was initiated against rats in market places by a firm that had a system of poisoning rats that did not create a subsequent nuisance due to decaying bodies. This campaign was very successful, and the cities are now fairly well rid of rats.

The twin cities present a neat, well-kept appearance, taken as a whole. Most of the streets are paved. The majority

Number 15.

of the unpaved streets in Champaign are in the Negro District, while most of Urbana's unpaved streets are on the eastern edge of the town, especially in the vicinity of the Big Four Shops. Some effort to control dust on the unpaved streets is made, cinders and oil sometimes being used for surfacing. The main streets are wide, provided with curbing, and in most places are well drained. Most of the alleys in the business districts are paved, and the majority of those in the residential districts are surfaced with cinders. The six state highways that lead into Champaign and Urbana are of concrete and are in good condition.

CHAPTER VI

Infectious Diseases

The Health Departments of Champaign and Urbana are regulated by the Illinois State Department of Health in the matter of notification of diseases. Table XXII is a list of diseases and disease carriers declared to be contagious, infectious, communicable and dangerous to the public health, notification of which is required by law.

A. Table XXII

1. Actinomycosis
2. Acute infectious conjunctivitis (ophthalmia neonatorum).
3. Ancylostomiasis (hookworm).
4. Anthrax.
5. Botulism and other forms of food poisoning.
6. Chancroid.
7. Chickenpox.
8. Cholera (Asiatic).
9. Dengue.
10. Diphtheria
11. Dog bites
12. Dysentery (amoebic).
13. Dysentery (bacillary and other infective types).
14. Epidemic (lethargic) encephalitis
15. Erysipelas
16. Favus
17. German measles
18. Glanders
19. Gonorrhea
20. Granuloma inguinale
21. Impetigo contagiosa (in institutions).
22. Influenza, epidemic
23. Leprosy
24. Malaria
25. Measles
26. Meningitis, epidemic (cerebrospinal fever, meningococcus meningitis)
27. Mumps
28. Pellagra
29. Paratyphoid fever

Table XXII (Continued)

30. Plague
31. Pneumonias, The Primary, and the pneumonias complicating influenza, measles and whooping cough
32. Poisonings, heavy metals, drugs, occupational and other poisonings
33. Poliomyelitis, acute anterior (infantile paralysis)
34. Psittacosis
35. Puerperal septicemia
36. Rabies
37. Rocky Mountain spotted or tick fever
38. Scarlet fever
39. Septic sore throat
40. Smallpox
41. Syphilis
42. Tetanus
43. Trachoma
44. Trichinosis
45. Tuberculosis (pulmonary)
46. Tuberculosis (other than pulmonary)
47. Tularemia
48. Typhoid fever
49. Typhus fever
50. Undulant fever and Malta fever
51. Vincent's angina and other anginas
52. Whooping cough
53. Yellow fever

In general, notification to the local registrar is quite well carried out. Of the common communicable diseases there is practically 100% notification with the possible exception of German Measles. The reporting of the latter disease is quite lax. The venereal diseases are more or less regularly reported, probably as well reported as in any community. It is estimated by local physicans that probably not more than 50% of the cases of venereal diseases are reported. As a stimulant to notification, any person who fails to report any of these diseases is subject to a fine of $200.00 or imprisonment of six months or both.

B. Quarantine Regulations

By quarantine is meant the limitation of freedom of movement of any person or animal who is sick with or has been exposed to a communicable disease and of all persons and objects on premises capable of spreading infection, for a definite period of time.

Modified quarantine, if authorized, may be permitted for diphtheria, scarlet fever, poliomyelitis, meningococcus meningitic (epidemic meningitis, cerebro spinal fever) under the restrictions set forth by the Illinois Department of Health.

None but the local or state health authority or his duly authorized representative may establish and terminate quarantine. The attending physician, unless he is a legally qualified health authority, has no jurisdiction over quarantine and the raising of quarantine by the attending physician is illegal unless he has been authorized by the local board of health to do so. Under the rules of the Illinois Department of Public Health, a case reported as scarlet fever must be quarantined as such. If a physician questions the original diagnosis, the quarantine may not be raised until the dispute is settled by a representative of the Illinois Department of Health upon examination of the case except where there are approved health departments, a local representative will see the case.

Cases of chicken-pox are quarantined for a minimum of 10 days and until all crusts have disappeared. Cases are excluded from school until the termination of quarantine. Susceptible contacts are quarantined and excluded from school for 13 days from the date of last exposure.

Cases of diphtheria, where laboratory tests are refused are quanantined for a minmum of 3 weeks. Where smears are permitted (and this is the rule in Champaign-Urbana) quarantine is maintained until the disappearance of the disease clinically and until there have been two successive negative cultures from the nose and throat taken at least 24 hours apart, and the first taken not sooner than 12 days from the onset of the disease. Exclusion from school is maintained for one week after the termination of quarantine. Contacts, if removed from the premises, are excluded from schools until 2 negative cultures have been returned, but not sooner than 5 days after removal. If the case is removed from the premises contacts are held for two negative cultures.

Quarantine is maintained for measles until 5 days after the rash has subsided and until secretaions from mucous membranes have ceased. Exclusion from school is maintained for the period of the quarantine. Contacts who are susceptible are held for 16 days. Immunes are not held.

German measles and mumps are held in quarantine and excluded from school until disappearance of the disease clinically but for a minimum of 5 and 10 days respectively. Susceptible contacts are held for 3 weeks from date of last exposure.

Cases of scarlet fever are quarantined for a minimum of 4 weeks and excluded from school for a minimum of 5 weeks, but in each case the patient must be clinically well and all discharges must have ceased. Susceptible contacts are quarantined for one week if cases leave premises. Immune contacts are not held if they leave the premises.

Quarantine is maintained for small-pox for a minimum of three weeks and until the disease has disappeared clinically. Exclusion from school is for the same period. Susceptible contacts are held for 20 days from date of last exposure and excluded from schools for the same period.

Whooping cough is quarantined for 5 weeks after the development of the cough and at least 1 week after the cough stops. Exclusion from schools is for the same period. Susceptible contacts are quarantined for 2 weeks from exposure and excluded from school for the period of the quarantine.

Influenza is quarantined for 5 days after recovery and normal temperature. Cases are excluded from school for the duration of the quarantine. Contacts are not quarantined if the patient is properly isolated on the premises.

Cases of epidemic meningitis are quarantined until 2 weeks after recovery of normal temperature and excluded from school for the same period. Contacts are quarantined for 2 weeks after date of last exposure.

Cases of poliomyelitis are quarantined and excluded from schools until recovery, but with a minimum of three weeks. Contacts under 16 years of age are quarantined and excluded from schools for 2 weeks from exposure.

Cases of septic sore throat are quarantined for the clinical course of the disease, and until cultures from the nose and throat are negative for haemolytic streptococci. Contacts, if not carriers, are not quarantined or excluded from schools.

Pneumonia is quarantined until a negative culture is

obtained from the nose and throat and sputum, or until two weeks after all secretions have stopped and the temperature is normal. Cases are excluded from school for the period of the quarantine. Contacts are not quarantined or excluded from schools.

Cases of pulmonary tuberculosis are not quarantined unless the patient violates rules relative to care of sputum and other rules for the control of tuberculosis. If he does violate these rules, the Health Officer has the power to impose strict quarantine. Cases are excluded from the schools until complete recovery has taken place.

Quarantine is maintained for typhoid and paratyphoid fevers until there have been two negative stool and urine examinations taken not sooner than 10 and 30 days respectively after the temperature has become normal. Cases are excluded from school for the duration of the quarantine. Contacts are not quarantined but they are not allowed to engage in the production, distribution or sale of food. There is no exclusion from school if there is no contact with the patient.

With the exception before noted, of German measles, quarantine regulations are strictly enforced in Champaign-Urbana. Houses are placarded by the local police under the direction of the Health Officer and are removed at his direction. The maintenance of the quarantine, as it must be, is placed on the honor of the inmates, who, as a rule, are conscientious in maintaining it.

C. Methods of Disinfection and Fumigation

Disinfection is the destroying of the vitality of pathogenic microorganisms by chemical or physical means.

Concurrent disinfection indicates the application of disinfection immediately after the discharge of infectious material from the body of an infected person, or after the soiling of articles with such infectious discharges, all personal contacts with such discharges or articles being prevented prior to their disinfection.

Terminal disinfection indicates the process of rendering the personal clothing and immediate physical environment of the patient free from the possibility of conveying the infection to others at the time when the patient is no longer a source of infection.

Disinfecting solutions approved by the Illinois Department of Health are: Formalin, 5%; Cresol, 2%; Bichloride of Mercury 1/1000 solution; or other chemical solution having a disinfecting strength equal to 5% phenol (carbolic acid).

If the spread of contagion is to be prevented from the patient ill with the disease, measures of disinfection must be persistently carried out from the onset of the first symptoms until the termination of the disease. Terminal disinfection is required in all cases of communicable diseases, but in no case is it as important as concurrent disinfection. Just prior to the removal of the quarantine placard the health officer should assure himself that all infected articles in the household have been rendered free from the infectious agent of the disease.

Following every case which has been quarantined fumigation is carried out. This is done by the usual formaldehyde candles and is quite conscientiously done. Whether or not the benefits derived from it are not due to the fresh air and sunshine which is a consequence of "airing out" afterwards is a matter for consideration, but it is the policy of the Commissioner of Public Health and Safety to fumigate in every case. It can do no harm, and is sure to be followed by a thorough dose of fresh air, and this certainly is of benefit.

D. What Measures are Taken to Prevent the Spread of Tuberculosis

The campaign against Tuberculosis is carried on in Champaign-Urbana by the Tuberculosis and Public Health Associatio of Champaign County in connection with the Champaign County Tuberculosis Sanitarium. These are two entirely separate organizations. The Sanitarium deals only with Tuberculosis cases while the other Association includes all measures in the promotion of the communities' welfare relative to health. The work of each organization will be briefly reviewed.

The Champaign County Tuberculosis "Outlook" Sanitarium

The Outlook Sanitarium is located about 1 1/2 miles north and east of the Court house, in Urbana, on Route 25 to Chicago. The institution is supported by the County through revenue from taxes. Dr. R. G. Bell is in charge.

The capacity of the hospital is forty-eight patients though financially they are limited to thirty-six. The need for such an institution may be better realized when we consider

that the 1930 report from the clinic gives 251 cases of Tuberculosis in Champaign-Urbana. The sanitarium is far too small. On July 20, 1931 the citizens of Champaign County will vote on a Sanitarium Tax. According to Dr. Bell if the tax increase is voted down the Sanitarium will be closed. The seriousness of the situation warrants the favorable consideration of the local citizens.

The sanitarium endeavors to conduct educational campaigns in the prevention and control of Tuberculosis, in the following ways:

1. The work of the Sanitarium, clinic and field nurses.
2. Direct prevention by training the patients themselves to properly care for sputum.
3. Early diagnosis with accompanying information.
4. Promotion of general good health, including physical examinations.
5. By any contact with the public, as newspaper publicity, cooperation with insurance companies, etc.

Such a campaign takes continuous and persistent effort and there is no satisfactory way of measuring the results obtained.

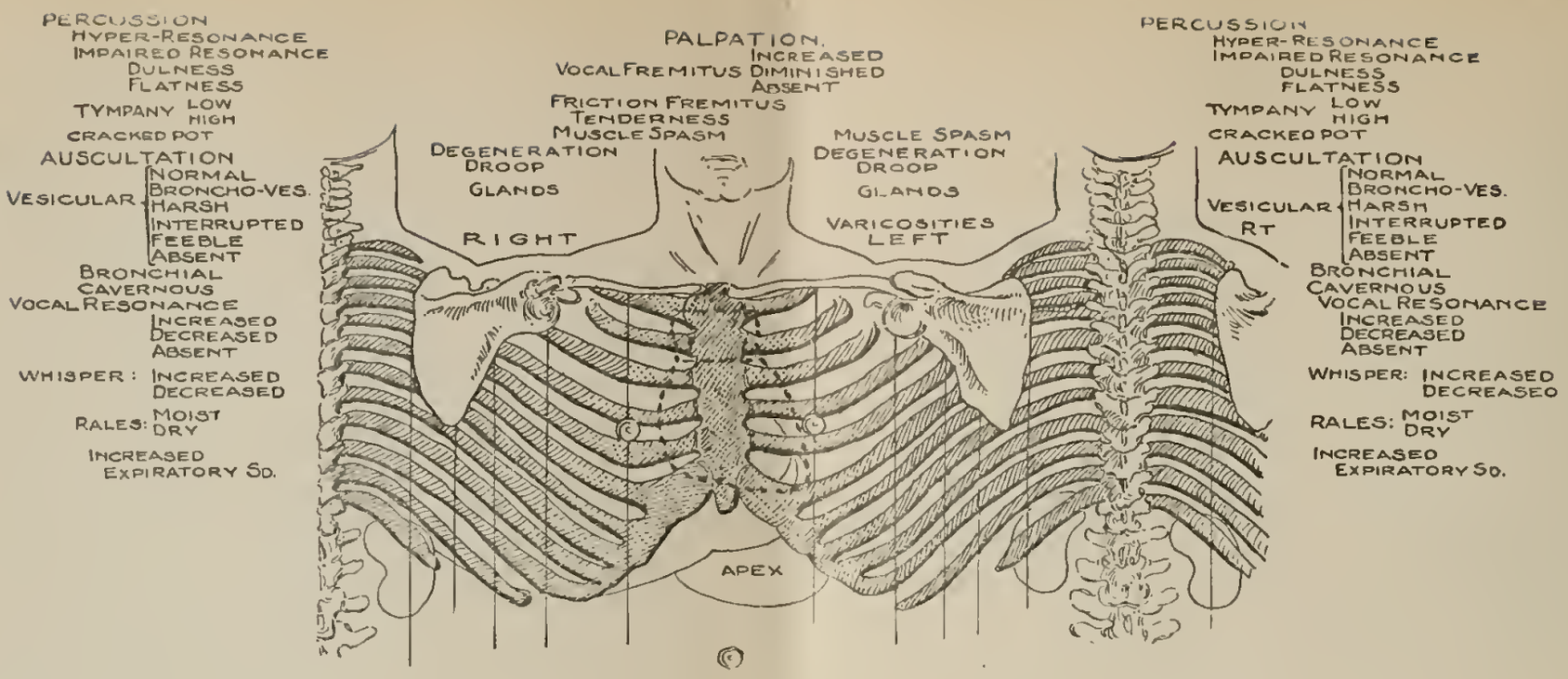
The work of the Sanitarium and those connected with it is deserving of more recognition and praise than it is getting at the present time.

The Tuberculosis and Public Health Association of Champaign County

The Tuberculosis and Public Health Association of Champaign County is located at 110 W. Church Street. The organization is supported by private donation, by the local Red Cross and by the Community Chest. The personnel of the department consists of two nurses and Dr. R. G. Bell. Dr. Bell has charge of the chest clinics only. An infant welfare clinic is held every Thursday afternoon at Mercy Hospital. The two nurses of the Association give nursing service at these clinics. The present officers of the Association are: President, W. W. Ernest, Vice-president, Dr. C. F. Newcomb, Secretary and Treasurer, Nelle N. Ryder. Free clinics are held on Wednesday afternoon and Saturday morning for the purpose of examination and diagnosis. Any person in the County who suspects he has tuberculosis may come, and any doctor may refer cases there for diagnosis.

When a person first applies at the clinic a history is taken and a physical examination made and recorded on a card for that purpose. This card is shown on page 100. Cases which require immediate hospitalization are sent to the Champaign County Sanitarium.

After the diagnosis has been established those cases which are not sent to the sanitarium are treated at home. Home treatment may be under the guidance of one's family physician or under the Association. In either case patients are visited by the nurses from time to time and they visit the clinic as often as may be necessary for advice. Form H is the record card and report of home conditions used by the



Nourishment: .....

Skin .....Hair .....

Gums .....Tongue .....

Teeth .....Throat .....

Fingers .....Pupils .....

Nose .....Glands .....

Chest: A. P. .....Lat. .....Shoulders .....

Retarded Motion .....Depressions .....

Spasm and Degeneration .....

Heart .....

Veins .....Remarks .....

MEDICAL TREATMENT

Form D. 21.

ILLINOIS TUBERCULOSIS ASSOCIATION

STANDARD DISPENSARY BLANK

Date.....

Name .....

Referred by .....

Age.....Sex.....S. M. W. Sep. Nativity.....

Occupation: Present.....Past.....

Exposure: Family.....

Others .....

Habits: Alcohol.....Tobacco.....

Weight: Usual.....Present.....Loss of.....in.....Height.....

Illness began.....with.....

Previous Diagnosis.....

Previous Treatment.....

Previous Health: .....

Measles.....Pneumonia .....

Typhoid.....Rheumatism .....

Grippe.....Indigestion .....

Pertussis.....Nervous History .....

Joint or Bone Disease.....

Marital History: Children.....Last Born.....

.....

Present Illness: Hoarseness.....

Digestion .....Bowels.....

Cough: How Long.....Time of Day.....

Character .....

Sputum: Quantity.....

Pain in Chest: .....

Dyspnea .....Sweats.....

Chills .....Sleep.....

Hemorrhages: .....

Menses: .....

Psychic: .....

Temperature: a. m.....p. m.....Previous.....

Tuberculin Tests: Kind.....

Sputum: Previous .....

Present .....

Diagnosis: ... .

Recommendations: .....

.....

Result .....Died.....

Referred to.....

Complications .....

No.....

Address.....

Address.....

.....Color .....

.....Stopped .....

.....

.....Drugs .....

When .....Dr.....

.....

.....Pleurisy .....

.....Ears .....

.....Fistula .....

.....Malaria .....

.....Operation .....

.....Notes: .....

.....

.....Appetite .....

.....

.....Character .....

.....

.....

.....

.....Pulse .....Blood Pressure.....

.....Result .....

.....Prognosis .....

Form G . Standard Dispensary Blank

Form H. Tuberculosis Record

TUBERCULOSIS RECORD

No.

Sex M F Color W B Marital Status S M W D

Name Reported by

Address 1. Directions 1. Phone 1.

2. 2. 2.

3. 3. 3.

4. 4. 4.

Date of birth Country of birth: Pt. Country of birth: Pt's Mother

Occupation in Industry	Date	Nature of Duties		Occupation in Industry	Date	Nature of Duties
1.			4.			
2.			5.			
3.			6.			

History of present illness

Previous illnesses (give dates)

Exposure to Tbc.

Private Physician; Clinic or Sanatorium (give address and phone)	Diagnosis	Date Admitted	Date Discharged
1.			
2.			
3.			
4.			
5.			
6.			

Condition at 1st visit: In bed Up Working. Symptoms

Insured: Yes No Insurance Co. Policy No. Date of issue

					Condition of Discharge:						Transferred To:			
Date Admitted 1.	Visits:	(1)	(2)	(3)		(1)	(2)	(3)		(1)	(2)	(3)		(1)	(2)	(3)
2.	Total															
3.	Pay				Recovered				Able to work				Self			
Date Discharged 1.	Part				Improved				Unable to work				Family			
2.	Free				Unimproved				Not found				Hospital			
3.	Ins. Co.				Dead (date)				Not home				Other (specify)			

MEAD & WHEELER CO., CHICAGO FORM NOPHN 5

nurses of the Association.

The following data is taken from the Annual report of the Tuberculosis and Public Health Association for the year ending October 1, 1930. This gives an idea of the magnitude of their work.

The visiting nurses of the Champaign County Tuberculosis and Public Health Association made 3917 visits for the year. In 1927 they made 2963 visits.

Nursing service, and follow-up work in cooperation with the Outlook Sanitarium, chest clinic, the Family Welfare Association, school and city Health Department, and educational work are features of the Tuberculosis program.

During the last year 61 chest clinics were held in the office of the Association under the supervision of Dr. R. G. Bell of the Outlook Sanitarium. The visiting nurses assisted at these clinics in which 495 examinations were made. Of this number 283 were Champaign-Urbana patients. In this way 28 new cases of tuberculosis were discovered in the two cities, thus making a total of 251 cases of Tuberculosis in the two towns.

Of the 28 new cases of Tuberculosis discovered:

10 entered the Outlook Sanitarium.

1 entered a Veteran's Bureau Hospital

1 entered a hospital in Colorado.

3 left the County, going to live with some of their relatives.

13 remained at home for treatment.

Follow-up service is maintained with the Sanitarium and chest clinic whereby patients are visited in their homes where

service and instruction as well as actual nursing care are given. This required 392 visits.

Table XXIII

Number of new cases of T. B. discovered	28	
Pulmonary T. B. cases on file		230
Gland T. B. cases on file		15
Bone T. B. cases on file		6
Suspect T. B. cases on file		71
Observation T. B. cases on file		68
Contact T. B. cases on file		282
Chronic Bronchitis cases on file		29
General cases on file		269
Total		970

Table XXIV

Clinics

Chest Clinic

Number of clinics		51
Number of examinations of Champaign-Urbana patients		283 (total 4
Number of patients examined:		
Champaign 105 with 176 visits		
Urbana 61 with 197 visits		
Number of new patients:		
Champaign	63	
Urbana	32	
Total	95	

Table XXIV (Continued)

Infant Welfare Clinics

Number of clinics	51
Number of visits by babies	944
Number of new babies	175
Number of old babies	77

Average attendance per clinic 18.5

The rules of the Illinois State Department of Public Health for the control of tuberculosis are explained to each patient. Teachers and children with pulmonary tuberculosis are excluded from the schools. Others are not quarantined if they abide by the rules for control. In cases of violation of these rules patients are quarantined until well or non-infective. Following are the rules:

1. Every diagnosed or suspected case must be reported at once.

2. No person suffering from open tuberculosis (for definition of open case see rule 3) shall occupy the same sleeping room with any other person unless suffering from the same kind of tuberculosis. The sputum raised shall be destroyed by depositing it in a paper towel or sputum cup and burning, by depositing it in a glass or metal container and disinfecting. A tuberculous person shall not spit on floors, streets or walks and should not cough without covering his mouth. No child under 16 years of age should be placed in a general hospital in which there is a case of open tuberculosis.

3. If cases of the following type do not obey the rules

of caution as just outlined (rule 2) they shall be either placed in a sanitarium or quarantined in their homes.

a. All pulmonary cases who produce sputum containing tubercle bacilli.

b. All other cases in which tubercle bacilli are found in the discharges from the diseased process.

c. All known cases of pulmonary tuberculosis until three specimens of sputum are negative which have been submitted at weekly intervals.

d. All known cases of pulmonary tuberculosis are considered open cases for at least three months and until three successive negative sputums have been collected at intervals of one week.

4. No case of active tuberculosis may be removed from one city to another without permission of the health authority of the town.

5. No teacher or pupil with active form of tuberculosis will be permitted in schools.

6. An open case will not be permitted to engage in the handling of food.

Table XVIII, page 69, gives the mortality record of tuberculosis for Champaign and Urbana, which indicates very little improvement.

The forms on pages 106-110 inclusive are used by the Tuberculosis and Public Health Association. These forms are self-explanatory.

ILLINOIS TUBERCULOSIS AND PUBLIC HEALTH ASSOCIATION

County _____

Report of Nursing Service for month of _____, 19 ____

Name of Organization _____

Name of Nurse _____ Address _____

I. SCHOOL REPORT:

Total

Schools visited, Public ____ Parochial ____

General Inspections ____

Routine Inspections ____

Weighed and measured ____

No. 7% or more underweight ____

Excluded ____

Remediable defects found ____

Other defects found ____

Com. disease cases found—classify ____

Referred to family physicians ____

To Clinics ____ To Hospitals ____

To Dentists ____ To Oculist ____

T. B. Contacts ____ T. B. Suspects ____

Class Room Talks ____ Demonstrations ____

Conferences, teachers and others ____

Corrections—teeth ____

Vision ____

T. & A. ____

Other ____

Marked Nutritional improvement ____

Number of Schools Serving Hot Lunches ____

Modern Health Crusade organized ____

TOTAL M. H. C. in county ____

II. CONFERENCE REPORT:

Child Welfare ____

New pts. ____ Old pts. ____

Dental ____

New pts. ____ Old pts. ____

Nutrition ____

New pts. ____ Old pts. ____

Health ____

New pts. ____ Old pts. ____

Other—specify ____

New pts. ____ Old pts. ____

Remarks ____

III. CLINICS:

	No. of pts.	No. of clinics
Tuberculosis		
Orthopedic		
Dental		
Others		

VISITS OF DISTRICT NURSE ____

VISITS OF FIELD SECRETARY ____

IV. TUBERCULOSIS NURSING SERVICE:

Total

No. of cases forwarded end of month ____

New patients during month ____

Active ____ Suspect ____ Contacts ____

No. of patients dismissed during month ____

Type of Cases ____ Pul. ____ Other ____

Number of patients died during month ____

Number of patients left county ____

Total number of cases on file ____

Number of patients hospitalized ____

Old ____ New ____

Patients reported to health authorities ____

Conferences or meetings attended ____

Office conferences ____ Others ____

Business visitors to office ____

Number of Nursing Visits ____

Number of visits to doctors ____

Number of social service visits ____

V. GENERAL REPORT:

Home visits ____ Nursing ____ Instructive ____

Ins. Co. ____ Others ____

Prenatel visits ____

Post-partum ____ Mother ____ Babe ____

Referred to family physicians ____ To dentists ____

To clinics ____ To hospitals ____

To County Physician ____

To Health Officer ____

To Relief Agencies ____

Taken to clinics ____ To hospitals ____

Visits to Committee members ____

To local physicians ____ dentists ____

Social Service visits ____

General Conferences ____

General Cases on file ____

Days on duty ____

Hours in office ____ In field ____

In health center ____ In Schools ____

Staff meetings in office ____

Lectures and meetings attended ____

Talks given ____

Towns visited ____

Letters ____ Cards sent ____

SUMMARY OF VISITS:

Nursing ____

Instructive ____

Other ____

Total ____

FURTHER REMARKS ON OTHER SIDE

ILLINOIS TUBERCULOSIS AND PUBLIC HEALTH ASSOCIATION

County.....

Report of Nursing Service for month of....., 19....

Name of Organization.....

Name of Nurse..... Address.....

I. SCHOOL REPORT: Total

Schools visited, Public..... Parochial.....
General Inspections .....
Routine Inspections .....
Weighed and measured .....
No. 7% or more underweight.....
Excluded .....
Remediable defects found.....
Other defects found.....
Com. disease cases found—classify.....
.....
.....
Referred to family physicians.....
To Clinics..... To Hospitals.....
To Dentists..... To Oculist.....
T. B. Contacts..... T. B. Suspects.....
Class Room Talks..... Demonstrations.....
Conferences, teachers and others.....
Corrections—teeth .....
Vision .....

IV. TUBERCULOSIS NURSING SERVICE: Total

No. of cases forwarded end of month.....
New patients during month.....
Active..... Suspect..... Contacts.....
No. of patients dismissed during month.....
Type of Cases.....Pul..... Other.....
Number of patients died during month.....
Number of patients left county.....
Total number of cases on file.....
Number of patients hospitalized.....
Old ..... New.....
Patients reported to health authorities.....
Conferences or meetings attended.....
Office conferences..... Others.....
Business visitors to office.....
Number of Nursing Visits.....
Number of visits to doctors.....
Number of social service visits.....

V. GENERAL REPORT:

Home visits Nursing..... Instructive.....

Form J. Illinois Tuberculosis and Public Health Association

Form K. Tuberculosis--Record of Visits

TUBERCULOSIS--RECORD OF VISITS

No._____

Name_____ Address_____

Date	T		P	R	SPUTUM			Cough	Care of Dishes Etc.	Sleeps Alone	Hours of Rest	Diet	Weight	Fatigue	Night Sweats	Hemoptysis (Date)	Hoarseness	Next Visit Should be	Nurse	Fee
	A.M.	P.M.			*Exam. (Date)	Amt.	Disposal													

CODE: O—satisfactory; 1, 2, 3, slightly, moderately, markedly unsatisfactory; X—needs medical attention; —no information obtained; *P—positive; N—negative.
Use reverse side for completion of record.

MEAD & WHEELER CO., CHICAGO FORM NOPHN56

Form 1. Morbidity Record

MORBIDITY RECORD

No. _____

Name | Sex M F | Color W B | Marital status S M W D | Reported by

Address | Directions | Phone

Date of birth | Country of birth: Pt. | Country of birth: Pt's mother | Apparent economic status: Comfort Necessities Poverty

Age

Industry | Occupation | Nature of duties

Physician | Address | Phone

Diagnosis | Complications

Symptoms:

Condition on first visit: In bed Up | How long ill | Is care adequate | By whom given

Remarks: (include other facts related to present illness and convalescence)

Insured: Yes No | Ins. Co. | Policy No. | Date of Issue

Date admitted	Visits: Total	Condition of Discharge		Trans. to:	Type of care
	Pay	Recovered	Able to work	Self	Nursed
Date discharged	Part pay	Improved	Unable to work	Family	Advised only
	Free	Unimproved	Not found	Hospital	No need
	Ins. Co.	Dead (date)	Not home	Other (specify)	

MEAD & WHEELER CO., CHICAGO — FORM NO. P H [illegible]

Form N. Maternity Record

MATERNITY RECORD

No. _____

Color W. B. | Marital Status S. M. W. D. | Reported by

Name

Address 1. | Directions 1. | Phone 1.
2. | 2. | 2.
3. | 3. | 3.

Date of birth | Country of birth: Pt. | Country of birth: Pt's mother | Apparent Economics Status: Comfort Necessities Poverty

Occupation

Physician or midwife in charge (give address and phone)
1.
2.
3.
4.

Physician or midwife at delivery (give address and phone)
1.
2.
3.
4.

	Date	Date	Date	Date	Disease: Cardiac, renal, mental, tuberculosis, venereal	Date	Under treatment (patient)
Last menstruation					Patient		Where
Expected confinement					Husband		Date

HISTORY OF PREGNANCIES INCLUDING THE PRESENT PREGNANCY

NAME	Date of Birth	Months of Pre-Natal Care	Hospital	Home: Doctor	Home: Midwife	At Term	Month: Mis-Carriage	Month: Pre-Mature	Still Birth	Pregnancy Complicated	Delivery Operative	Multiple	Months Breast Fed	Now Living	Condition If Alive Date and Cause of Mis-Carriage Still-Birth or Death

Insured: Yes—No | Insurance Co. | Policy No. | Date of Issue

MEAD & WHEELER CO., CHICAGO FORM NOPHN 57

Table XXV

Age Distribution of Deaths

Under 10	4	cases
10 to 19	9	"
20 to 29	37	"
30 to 39	35	"
40 to 49	16	"
50 to 59	21	"
60 to 69	11	"
Over 70	15	"
Unknown	1	"
Total	149	"

Tables XXV and XXVI are records of cases in Champaign County under the supervision of the Tuberculosis League (now the Tuberculosis and Public Health Association) for the 5-year period from July 1, 1920 to June 30, 1925. It is probable that these figures are abnormal due to the deleterious effects of the World War.

Table XXVI

Age Distribution of Diagnosed Cases

Under 10	27	cases
10 to 19	67	"
20 to 29	102	"
30 to 39	110	"
40 to 49	34	"
50 to 59	24	"
60 to 69	8	"
Over 70	3	"
Unknown	1	"
Total	376	"

E. Venereal Disease, Reporting and Control

There is no obvious "red light" district in Champaign-Urbana. There are, however, the usual number of street walkers and "easy girls" to be found and who are greater sources of danger than licensed prostitutes. One hesitates to judge the number of prostitutes and amount of venereal disease in any city, suffice it to say it is probably no more nor no less prevalent in Champaign-Urbana than in any American cities.

Venereal diseases are required to be reported, but may be done so by number if the patient so desires. If the case is reported by number, the physician in charge must keep a book containing the true name and address of the patient, and such book must be open at all times to inspection by the local health officer and legal representative of the State Department of Public Health.

Upon discharge of a case another report is required stating the reason for discharge. If discharged as uncured and still in an infectious condition, and if the discharging physician receives no notice of transfer to another doctor within ten days, the attendant first treating the disease must report the correct name and address of his former patient.

Any person having a venereal disease in the infective state is prohibited from preparing or handling food, from working as a barber, manicurist or any other occupation in which he may transmit the disease to others, or to engage in the profession of dentistry, medicine or nursing.

The local health officer has the power to quarantine any case of venereal disease which is in an infective state. It is also his power to compel any person who is a prostitute to submit herself to an examination to ascertain if she has a venereal disease. These rules are seldom, if ever enforced, however, and as far as may be ascertained there has never been a case of venereal disease quarantined in Champaign-Urbana.

Persons having a venereal disease in an infective stage must, before moving from Champaign-Urbana to another city, first secure permission from the Health Officer, who shall notify the Health Official of the community to which the patient is going at least 24 hours in advance of the time the patient wishes to leave.

Reporting and control of venereal disease is, on the whole, good. It is probable that all cases coming under the control of a physician are not reported. In addition, there are a number of cases each year who treat themselves with drug store remedies or who let the disease run its course who never come under the care of a physician and these are the cases which are potent sources of danger and which are difficult, if not impossible to reach. It is this class toward whom public education should be directed both from a personal and community standpoint in the hopes of reducing the number of infective cases which are carrying on, undirected and unrestrained, in the spread of venereal disease.

Cases of venereal disease are reported on the official state blanks furnished by the State Department of Public Health. Form P, is one of these official report blanks. These blanks

№ 81380

PRIVATE RECORD OF REPORTED VENEREAL CASES

Date of Report ..... 19.....

Name or Key Number of Patient.....

.....

Occupation.....

Source of Infection.....

.....

Address of source of infection

Age..... Color..... Sex.....

Married Single
Widowed Divorced.....
Specify which

Gonorrhea: Acute, Subacute, Chronic

Syphilis: Primary, Secondary, Tertiary

Chancroid .....

№ 81380

DISCONTINUED TREATMENT SLIP

Date..... 19.....

County..... City.....

Name.....

The above Patient has not returned for treatment since

..... 19.....

Laboratory findings..... and is still considered infectious.

Signed ..... M. D.

Address..... Date..... 19.....

Return this slip to your local Health Officer or Department of Public Health, Springfield, Illinois, if patient has discontinued treatment and is still in an infectious stage.

49019—4-26—100-M

ILLINOIS DEPARTMENT OF PUBLIC HEALTH

ORIGINAL

№ 81380

REPORT OF VENEREAL DISEASE

To be treated as confidential so far as is consistent with public safety and the Rules for the Control of Venereal Diseases.

It shall be the duty of every Physician to report by name or number all cases of Syphilis, Gonorrhea and Chancroid occurring in his or her practice, within 24 hours after having knowledge of same.

I hereby report the following case of.....

occurring in the city, village or township of..... County.....

Date..... Age..... Occupation..... Color..... Sex.....
(Single, married, widowed, divorced)

(According to infection present underscore disease and stage of disease).

GONORRHEA (Acute or chronic) SYPHILIS (Primary, secondary, tertiary) CHANCROID

Laboratory findings: Smears..... Dark Field..... Wassermann Test.....
Indicate by positive (X) or negative (—)

Name and address of source of infection.....

Is patient under treatment?..... With you?..... If not, by whom?.....

Is patient in an institution?..... Where?.....

Previously treated by.....

Is patient infectious?..... Should case be investigated?.....

Name of Physician..... Address .....

.....
(Place and Date)

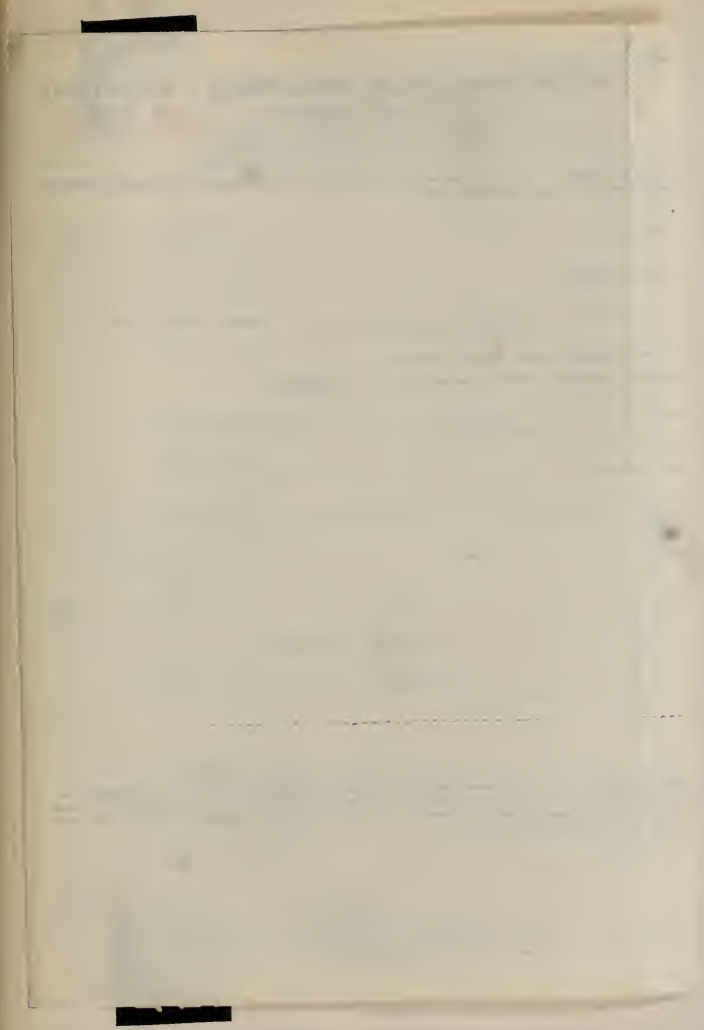
I hereby acknowledge the fact that I have a dangerous communicable disease, that I will continue under a physician's care until cured, that if I change physicians I will see that the first physician is notified of the change within ten days, and that if I change physicians without notifying the first physician or cease taking treatments before being cured that this agreement may be sent to the Illinois State Department of Public Health, Springfield, Illinois.

.....
(Address)

.....

Witness

....., M. D.
(Keep this in your files for use later.)



Form P. Official Report Blank

are forwarded by the attending physician to the Local Health Physician.

In Champaign the Health Officer sends these reports to the Mayor's office. A copy is made of each report before the original is finally sent to Springfield. These copies are filed in the Mayor's office but are not open to public inspecti

The Health Officer of Urbana forwards these reports directly to Springfield and no record is kept of them locally.

Table XXVII

1925	71
1926	82
1927	42
1928	43
1929	68
1930	36

Table XXVII gives the number of cases reported on Official Blanks by years for the six year period, 1925-1930 inclusive, in the city of Champaign. Similar information may be obtained by writing to the State Department of Public Health at Springfield asking for the specific information for Urbana.

F. Should Some Other Diseases be Prevalent, What Measures are Taken to Control Them?

The rules and regulations of the State Department of Healt are adhered to as closely as possible in Champaign-Urbana. The following measures are used in the control of various disease which may have a tendency to develop into an epidemic: Vaccina quarantine, Shick test, Dick test, swabbing and isolation.

G. Prevalance of Contagious Diseases in Twin Cities

Table XXVIII (Champaign--Total Contagion)

Disease	1928	1929	1930
Chickenpox	106	15	51
Mumps	8	49	29
Scarlet Fever	19	39	52
Tuberculosis	23	16	22
Pneumonia	20	25	13
Whooping Cough	11	36	63
Smallpox	1	7	0
Diptheria	3	2	2
Measles	18	117	49
Influenza	2	1	0
Typhoid Fever	2	3	4
Meningitis	1	-	0
Infantile Paralysis	0	2	0
Nephritis	0	11	0

Table XXIX (Urbana--Common Contagious Dis

Disease	May 21, 1929-30	May 21, 1930-31
Mumps	53	12
Measles	18	259
German Measles	3	2
Scarlet Fever	50	27
Tuberculosis	8	3
Tyohoid Fever	3	1
Diptheria	1	1
Whooping Cough	123	13
Smallpox	5	0

Table XXX

Number of Deaths Due to the More Common Diseases in Champaign

Diseases	1928	1929	1930
Heart (Endocarditis, Myocarditis, Angina Pectoris)	59	47	43
Cerebral Hemorrhage	25	21	22
Paralytic Stroke Apoplexy	--	--	10
Cancer	21	13	16
Pneumonia	21	17	18
Tuberculosis	9+4 dr.	11+11	8
Diptheria	2	1	-
Influenza	3	5	-
Poisoning	3	1	-
Diabetes	2	-	-
Nephritis	13	-	-
Meningitis	1	-	-

Tables XXVIII, XXIX and XXX are included in this part of the report to emphasize the necessity for constant and efficient supervision of Public Health measures. A large number of the deaths listed under the first three causes are indirectly the result of venereal diseases. The campaign against venereal diseases does not receive as much support as their seriousness warrants.

CHAPTER VII

General Summary

A. Conditions Found

1. Champaign and Urbana are prosperous cities located in East Central Illinois, 125 Miles South of Chicago.

2. In 1833 the General Assembly of the State of Illinois, established the County of Champaign and named Urbana the County Seat.

3. In 1860 Champaign was firmly established as an incorporated village, separate in government from Urbana.

4. The University of Illinois is located in the twin cities and has been influential in the development of the communities.

5. The combined population of Champaign-Urbana, according to the 1930 Census, was 33,390. The University population is approximately 11,000.

6. In 1920 illiterates formed 1.4% of the population in Champaign. It is estimated that the 1930 Census will not materially change this figure.

7. There is one physician on the Board of Health for each city. Dr. Geo. F. Way of Urbana receives a salary of $600.00 and Dr. Geo. C. Appelle of Champaign a salary of $900.00 per year. Lay members of the Boards do most of the work with the exception of supervision of quarantine.

8. The twin cities have a modern sewage treatment plant of recent design, built at a cost $500,000. Future needs were

considered in planning the project. The sewage treatment works readily extended were constructed for an average population, within the sanitary district, of 50,000, of whom 45,000 would be actually connected with the sewers. The estimated population for 1960 was 51,000 people. The sewage disposal plant, under the able management of Gus. H. Radebaugh, is giving very satisfactory results.

9. The storm sewer system of Champaign-Urbana is not adequate and the Boneyard Creek at times gives off odors. Some wastes are discharged into this stream as it flows through the two cities. This open Creek flowing through the two towns is an undesirable feature.

10. There is no regular collection of garbage and refuse in Champaign-Urbana. The inspection of the methods for the collection and disposal of garbage, ashes, and rubbish revealed a very unorganized system which is very costly to the citizens. The work is not carried on in the most sanitary manner.

11. Vital statistics are available only since the year 1916.

12. The birth rate for Urbana from 1919 to 1928 was lower than the state. The last three years show an increase which brings the Urbana rate above the state in general. The birth rate for Champaign has been higher over this period of years than the state rate.

13. In general, the death rate for these two towns is higher than the state.

14. The mortality of Tuberculosis is considerably lower than the state rate. This is probably due to the work of our

local organizations, previously mentioned in this report.

15. The number of cases of Typhoid Fever in Champaign and Urbana is too large for this community. The records available do not indicate whether these cases were of local origin or not. It is very probable that the disease, in most cases, was contracted at some place other than this locality.

16. Deaths from measles are practically unheard of in the twin cities. Epidemics frequently occur, but there have been only 7 fatalities since 1918.

17. Reporting of vital statistics in this municipality is satisfactory but not yet 100%. With the exception of venereal diseases it is estimated that 85 to 95% of the cases of vital statistics are now being reported. There is no accurate way of determining the percentage of cases which are not reported. It is estimated that approximately 50% of the venereal disease cases are never reported.

18. It is at present difficult to find the ordinances that have been passed in Champaign or Urbana relating to nuisances. A plumber is in charge of complaints relative to sanitary nuisances in Champaign. The Health Officer of Urbana handles similar records in that city.

19. There are some breeding places for mosquitoes in the twin cities. The worst offender in this health hazard is Crystal Lake. Empty tin cans piled in alleys and at the city dumps, damaged spouting of dwellings and low places all constitute breeding places for mosquitoes. Anopheles are present in the twin cities, furnishing a malaria hazard.

20. Extension of sewer facilities has not been carried out to the extent desired. Entirely too many homes in these towns still have the outside privy.

21. Most vacant lots in the twin cities are well kept but there is still room for improvement.

22. The practice of piling garbage and rubbish in back yards, common in the outlying sections of the twin cities, constitutes a sanitary hazard.

23. The majority of the streets and alleys are in good condition. The unpaved sections are giving some trouble from mud and dust.

24. The present dumps of Champaign-Urbana are not well-kept, with the exception of the new Champaign dump which as yet has received very little refuse and is well attended.

25. The rendering works east of Urbana is located in an isolated area and does not constitute a nuisance.

26. Notification of communicable diseases is quite thoroughly carried out in both towns.

27. Quarantine laws are efficient and well observed.

28. Fumigation is carried out after every case of communicable disease.

29. The Champaign County Tuberculosis Sanitarium is inadequately financed. The number of patients seeking admission is in excess of its physical capacity.

30. Venereal diseases are entirely too common in Champaign-Urbana. There are no free clinics.

31. The deaths resulting from automobile accidents for the year 1930 in Champaign alone totaled 17. Twelve deaths were caused from other accidents.

B. Criticisms

1. The storm sewer system of Champaign-Urbana of which the Boneyard is the chief means of disposing of the run-off is an unsanitary method of handling this problem.

2. The present system employed for the collection of garbage and refuse is a disgrace to the municipalities. Little more can be said for the means of disposal.

3. The lax manner in which the quarantine for measles has been carried out during the present epidemic is largely responsible for the spread of this most contagious disease. The same criticism may be offered for similar epidemics. The epidemic of whooping cough in 1930 may be cited as a further example. Such diseases, though they seldom result fatally are a menace when not under control.

4. Accumulation of rubbish in the rear of dwellings should be prohibited in the poorer sections. This refuse usually consists of ashes and tin cans.

5. A campaign should be waged against the old-fashioned outside privy.

6. The Urbana City Dump at the time of inspection was in very poor condition.

7. Champaign, especially, may be criticised for their present traffic control system. The criticism is based upon personal observations as well as the data presented in this report.

C. Recommendations

1. Establishment of a free venereal clinic by the Public Health Association.

2. It is recommended that Champaign-Urbana co operate in the establishment of a municipal control of the collection and disposal of the cities' refuse, on a similar basis to that of the sanitary district.

3. The quarantine for contagious diseases which are prevalent among grade school children should be more rigidly enforced.

4. It is further recommended that the health authorities insist upon more sanitary conditions in the poorer sections.

5. The sewer system should be extended sufficiently to afford an opportunity for connections with dwellings in the outlying districts in order to better sanitary conditions in this area.

6. The Urbana City Dump should be given better care.

7. It is suggested that Champaign employ the services of a trained and competent engineer to study the present traffic system and to make suggestions for improvement to the city council. There is certainly room for improvement in the present system.

UNIVERSITY OF ILLINOIS-URBANA
614.7856S C001
A SANITARY SURVEY OF CHAMPAIGN-URBANA IL
3 0112 025313120